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LINGUISTIC SURFACE STRUCTURE

IN FAMILY INTERACTION

by

Thomas D. MacRoy

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

Approved:

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Logan, Utah

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Thomas D. MacRoy

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ABSTRACT

Linguistic Surface Structure
in Family Interaction

by

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Utah State University, 1979

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The purpose of this dissertation was to determine the usefulness of the linguistic processes of Distortion, Deletion, Generalization, and Semantic Ill-Formedness as constructs which differentiate the verbal communication of families who express dissatisfaction with their current intrafamilial relationships from families expressing satisfaction with their current relationships. Specifically, it was hypothesized that dissatisfied families would use these linguistic structures to a greater extent in their interaction than would satisfied families.

Thirty-one family triads (father, mother, and child) were obtained by asking families randomly selected from the local high school student directory to participate.

The families were given a Revealed Differences questionnaire which they subsequently discussed together and a questionnaire regarding their satisfaction with their intrafamilial relationships. The discussions were recorded and transcribed. Each of 150 Surface Structures (a complete thought, usually a grammatical sentence) per family was scored for 11 subcategories of Distortion, Deletion, Generalization, and Semantic Ill-Formedness. Interrater reliabilities ranged from .86 to .98.

A mean was computed for the questionnaire pertaining to satisfaction with family relationships. Six families who scored at least one half standard deviation below the mean comprised the "dissatisfied" family group, and six families who scored at least one half standard deviation above the mean comprised the "satisfied" family group.

It was found that the dissatisfied families used significantly more Deletion ($p < .01$) than the satisfied families. Results for the other categories were in the expected direction but did not attain statistical significance. It was further found that the mothers and children in dissatisfied families obtained a significantly greater ratio ($p < .05$) of dysfunctional language structures per Surface Structure than did mothers and children in satisfied

families. Finally, three sets of 50 consecutive Surface Structures were compared to determine if the occurrence of each of the categories of dysfunctional language structures was consistent over the 150 Surface Structures which had been scored. It was found that dissatisfied families as a group did not differ in consistency from satisfied families as a group although individual families in either group varied widely.

The linguistic process of Deletion is theorized to result in impoverishing the speaker's model of the world and the behavioral choices available to the speaker. Similarly, the listener(s) who must respond to the impoverished model is limited in his response and behavioral options. Since all members of the dissatisfied families used this form of language, they perpetuate the impoverishing model of the world and the limitations on their behavior.

It was concluded that, while not establishing an etiology link between the use of Deletion and family dissatisfaction, Deletion is part of the current verbal interaction of families who express dissatisfaction. Further research involving families in which a member is symptomatic is warranted based on the findings of this study. Language may provide at least one form of explanation regarding the

process by which families maintain homeostasis in the face of symptom development. The use of linguistic concepts shows promise as an intermediate link in family interaction theory as well as a form of intervention available to therapists.

(133 pages)

CHAPTER I

INTRODUCTION

Although the influence of the family upon psychologically disturbed persons has long been recognized by therapists, conjoint treatment of family members is a relatively recent and proliferating approach to psychotherapy. Family therapy is increasingly being offered in internship and training programs and a variety of "schools" of family therapy have evolved. Most of these schools implicitly or explicitly assume that the ongoing interaction processes of the family are central to the formation and maintenance of symptoms in the family member who overtly exhibits disturbance (the identified patient). Further, it is assumed that intervention in the familial interaction processes will ameliorate the symptoms. These assumptions have not been rigorously researched and empirically tested, in part due to the abstract nature of the various theories which underlie the family approach and in part due to the methodological difficulties inherent in examining the interaction processes in families.

The most widely cited, but also most abstract, family theory has viewed the family as a system and emphasized the interpersonal communication patterns within the family as the pathogenic factor. This theory has been most clearly presented by Watzlawick, Beavin, and Jackson (1967). However, the abstract nature of the theory has made it difficult to operationalize although it has been attempted (Mishler & Waxler, 1968). At least one of the principal theoreticians has stated that it cannot be rigorously tested (Bateson, 1968). Difficulties such as these are reflected throughout the research. Riskin and Faunce (1972), after an extensive review of the family interaction research, concluded that findings regarding family interaction processes were either so minute that they provided little useful information or so global that their meaning was obscured. The paucity of productive research has stemmed in part from the lack of a method for specifically defining and operationalizing the communication behavior being studied.

It appears, however, that a method for operationalizing verbal aspects of communication behavior now exists. In various writings, Bandler and Grinder (Bandler & Grinder, 1975; Grinder & Bandler, 1976; Bandler, Grinder, & Satir, 1976) approached interpersonal and intrafamilial communi-

cation from a linguistic framework and identified, in a concrete fashion, language structures which may be dysfunctional in terms of facilitating clear, meaningful verbal communication. Briefly, this approach posits that native speakers of a language have two consistent intuitions about every sentence of their language. Native speakers intuitively know how the smaller units, such as words, go together to form a constituent unit, or a sentence. This intuition is labeled Surface Structure. Secondly, native speakers have an intuition about the sentence as to what a complete representation of its meaning or logical semantic relation would be. This intuition is labeled Deep Structure. When the Surface Structure is unclear, the meaning of the Deep Structure becomes obscure and communicational pathologies may evolve.

Bandler and Grinder (1975) outlined a number of ways in which the Surface Structure obscures the meaning, or full linguistic representation, of the Deep Structure. Four major categories of dysfunctional linguistic structures were presented. These major categories are: Semantic Ill-Formedness, a linguistic process which impoverishes the experience and options available to a person; Distortion, a linguistic process allowing persons to alter their

experience; Deletion, a linguistic process by which selective attention is paid to certain dimensions of experience and other dimensions excluded; Generalization, a linguistic process by which elements or pieces of a person's model become separated from their original experience and come to represent the entire experience of which the original experience is an example. These linguistic processes are clearly defined so that they are amenable to operationalization and measurement. The model will be more fully developed in the next chapter.

Although family interaction research evidence has demonstrated that families containing an identified patient interact in ways measurably different than families without an identified patient, the inability of family researchers to develop specific operational terms for abstract theoretical premises and clinical observations has limited the replicability and applicability of the research. If it can be demonstrated, in the context of Bandler and Grinder's linguistic model, that families expressing dissatisfaction and disharmony with their perceived intrafamilial relationships verbally communicate in dysfunctional ways which are clearly measurable, replicable, and applicable, therapists dealing with families could greatly increase the efficacy

of their approach by identifying and attending to the specifically dysfunctional language structures. While this would not demonstrate a cause and effect relationship between dysfunctional language structures and dissatisfaction or pathology in the family, it would demonstrate that dysfunctional language structures are part of the current family life of persons expressing dissatisfaction with their familial relationships.

The purpose of this dissertation is, therefore, to obtain empirical evidence about the extent of the occurrence of Semantic Ill-Formedness, Distortion, Deletion, and Generalization among family members and to compare the extent of occurrence between families whose members express dissatisfaction with their present intrafamilial relationships and families whose members express satisfaction with current familial relationships. Secondly, the purpose is to explore the usefulness of Bandler and Grinder's model for use in family interaction research.

CHAPTER II

LITERATURE REVIEW

Bandler and Grinder (Grinder & Bandler, 1976; Bandler et al., 1976) have indicated that the use of their linguistic model in therapy can be extended to families. They have implied that dysfunctional linguistic structures prevent family members from communicating adequately. "By carefully attending to the communication process . . . the therapist can identify the deletions, distortions, and generalizations which are preventing the family members from achieving together the experiences which they want" (Grinder & Bandler, 1976, p. 127). However, because their model has only recently been published, no normative data regarding the prevalence of dysfunctional linguistic structures in family interaction is available. Similarly, no evidence that families who perceive their intrafamilial relationships as unsatisfactory are characterized by a greater occurrence of dysfunctional linguistic structures is currently available. However, there is little question at the present time that families in which a member exhibits psychiatric symptoms do, in fact, interact in ways

which differ from families in which no member is symptomatic. Before presenting Bandler and Grinder's model, a theory of family interaction will be briefly presented, methodological problems in family interaction research reviewed, and some findings in family interaction research will be presented.

Theoretical Background of Family

Interaction Research

The field of family therapy and the empirical study of family interaction as pathogenic is a relatively new area of research. Despite this, the field has generated a diversity of models and it is no longer sufficient to differentiate "family theory" from "individual theory." As Ritterman (1977) has suggested, it is necessary to distinguish between the various models of family interaction. The model to be presented here is the "family-communication" (Ritterman, 1977) or "family interaction" theory (Greenberg, 1977; Watzlawick & Weakland, 1977). The major theoreticians of this model include Bateson, Jackson, Haley, and Watzlawick as well as their associates with the Mental Research Institute (MRI) in Palo Alto, California.

The discussion which follows will briefly review the major assumptions of this theory.

The theory focuses on the pragmatic aspects of communication or the way in which communication affects behavior.

The data of pragmatics are not only words, their configurations, and meanings, which are the data of syntactics and semantics, but their nonverbal concomitants and body language as well. Even more, we would add to personal behavioral actions the communicational clues inherent in the context in which communication occurs. Thus, from this perspective of pragmatics, all behavior, not only speech, is communication and all communication--even the communicational clues in an interpersonal context--affects behavior.

Further, we are not only concerned, as pragmatics generally is, with the effect of a piece of communication on the receiver but, inseparably linked with this, also with the effect the receiver's reaction has upon the sender. Thus, we would prefer to focus less on the sender-sign or receiver-sign relations and more on the sender-receiver relation, as mediated by communication. (Watzlawick et al., 1967, p. 22)

Since all behavior is communication, psychopathological symptoms are seen as a form of communication taking place in an interpersonal or familial context. By searching for patterns of communication in the present, (as opposed to searching for symbolic meanings, past causes, etc.) the affect of the behavior can be identified and a strategy developed to intervene in the pattern. The

difference between this approach and the traditional individual approach cannot be overstated.

Once it is accepted that from a communicational point of view a piece of behavior can only be studied in the context in which it occurs, the terms 'sanity' and 'insanity' practically lose their meanings as attributes of individuals. Similarly does the whole notion of 'abnormality' become questionable. For it is now generally agreed that the patient's condition is not static but varies with his interpersonal situation as well as with the bias of the observer. When, further, psychiatric symptoms are viewed as behavior appropriate to an ongoing interaction, a frame of reference emerges that is diametric to the classical psychiatric view. Thus, 'schizophrenia' viewed as the incurable and progressive disease of an individual mind and 'schizophrenia' viewed as the only possible reaction to an absurd or untenable communicational context (a reaction that follows, and therefore perpetuates, the rules of such a context) are two entirely different things. (Watzlawick et al., 1967, pp. 46-47)

Watzlawick et al. (1967) proposed several axioms of human communication and demonstrated how pathological communication may develop when the axioms are violated. A brief presentation of the axioms and potential communicational pathologies arising from their violation follows.

The first states simply: "One cannot not communicate" (Watzlawick et al., 1967, p. 51). If all behavior within an interactional situation is communication, that is, has message value, it follows that this axiom is true. Haley (1963) suggested that schizophrenics behave as if they are trying not to communicate while at the same time denying

that the denial is communication. A less extreme way in which pathological communication may develop is the technique of disqualification which involves invalidating one's own communication or that of the other. Examples of disqualification include phenomena such as self-contradictions, inconsistencies, subject switches, misunderstandings, obscure style or mannerisms of speech, etc. A final way of attempting not to communicate is the development of a symptom. This non-verbal communication indicates that something beyond the control of the person, such as nerves, alcohol, illness, communists, etc. prevents him from communicating.

The second axiom states: "Every communication has a content and a relationship aspect such that the latter classifies the former and is therefore a metacommunication" (Watzlawick et al., 1967, p. 54). This concept was originally postulated by Ruesch and Bateson (1951). Every message conveys information which is the content aspect. In addition to the content, every communication conveys information regarding what sort of message it is to be taken as and therefore is a message about the nature of the relationship between the communicants. Just as one cannot not communicate, one cannot not define the nature of one's rela-

tionship. Thus, every message carries with it a statement of how the speaker perceives himself in relation to the other. The other can respond to the speaker's definition in three ways. His response can confirm the definition and thus the speaker's perception of himself. He can reject the definition and redefine the relationship. This occurs in a wide range of relationships including psychotherapy (Haley, 1963, for example). Lastly, he can respond in such a way as to disconfirm the definition put forth by the speaker. This differs from rejection in that it negates the reality of the speaker as a source of the definition. This occurs frequently in the families of schizophrenics (Laing & Esterson, 1964; Laing, 1965; Laing, Phillipson, & Lee, 1966).

The third axiom states: "The nature of a relationship is contingent upon the punctuation of the communicational sequences between the communicants" (Watzlawick et al., 1967, p. 59). Punctuation refers to the manner in which communicants organize the sequence of events in their interchange.

In a long sequence of interchange, the organisms concerned--especially if these be people--will in fact punctuate the sequence so that it will appear that one or the other has initiative, dominance, dependency or the like. That is, they will set up patterns of interchange (about which they may or may not be in

agreement) and these patterns will in fact be rules of contingency regarding the exchange of reinforcement. (Bateson & Jackson, 1968, p. 205)

Discrepancies in persons' perceptions of punctuation may result in different views of reality and increasing conflict with charges of badness or madness (Watzlawick & Beavin, 1967; Watzlawick, Weakland, & Fisch, 1974; Watzlawick, 1976). Attributions of cause and effect and self-fulfilling prophecies stem from discrepancies in punctuation.

The fourth axiom states:

Human beings communicate both digitally and analogically. Digital language has a highly complex and powerful logical syntax but lacks adequate semantics in the field of relationship, while analogic language possesses the semantics but has no adequate syntax for the unambiguous definition of the nature of relationships. (Watzlawick et al., 1967, pp. 66-67)

The terms "digital" and "analogic" are taken from the field of computer science and describe the function of two types of computers. In terms of human communication, "digital" refers to words as symbols for what they name or stand for while "analogic" refers to nonverbal communication. Nonverbal communication includes not only body movement but also posture, gesture, facial expression, voice inflection, the sequence, rhythm, cadence of the words, and the context in which an interaction takes place. The content aspect of

a message is transmitted digitally while the relationship aspect is transmitted primarily in the analogic mode. Difficulties arise in that humans "translate" analogic language into digital language and because analogic language is not precise when it comes to semantics, errors occur and conflict results. This is particularly the case when the messages are incongruent or mutually exclusive. Double bind communication frequently occurs on this level.

The final axiom states: "All communicational interchanges are either symmetrical or complementary, depending on whether they are based on equality or difference" (Watzlawick et al., 1967, p. 70). Symmetrical relationships are characterized by attempts to establish and maintain equality while complementary relationships are characterized by the acceptance and enjoyment of difference. Pathologies occur in either form of communication when a "runaway" takes place. For example, symmetrical communication can escalate into competitiveness as communicants attempt to be "more equal." The result is more or less open warfare or "schism" (Lidz, Cornelison, Fleck, & Terry, 1957) ending in rejection by one or more of the communicants. Likewise, in complementary relationships, a definition of self can only be maintained by the partner's play-

ing the complementary role. Depending on the context, this can result in disconfirmation if the complementary role is rejected. Relationships characterized by rigid complementarity tend to produce the more flamboyant psychiatric syndromes.

Watzlawick et al. (1967) analyzed communication occurring in the context of an ongoing relationship in terms of systems theory (von Bertalanffy, 1968, for example). Although general systems theory has applications in a wide variety of fields, it can be adapted for use in describing ongoing relationships as well. Hall and Fagen (1956) defined a system as "a set of objects together with relationships between the objects and between their attributes" (p. 18). "Objects" refers to the components or parts of a system, "attributes" to the properties of the objects, and "relationships" tie the system together. Watzlawick et al. (1967) defined an interactional system as "two or more communicants in the process of, or at the level of, defining the nature of their relationship" (p. 121).

Systems can either be open or closed, depending on whether or not information is exchanged with their environment. Living systems, such as families, affect and are affected by the environment, and therefore are character-

ized as open systems with certain formal properties, the elaboration of which is not relevant in the present context. Jackson's (1957) concept of family homeostasis led to the later characterization of families as rule-governed systems (Jackson, 1965a, 1965b). Briefly, this concept assumes that the behavior of each individual family member is related to and dependent upon the behavior of all the other family members. Homeostasis is maintained through feedback such that input into the family system is acted upon and modified by the system. Therefore, in order for the system to remain stable, the range of behaviors available to individuals is limited by that system. As will be demonstrated in the following section, disturbed family systems severely limit the range of behavior of the family members, a characteristic which is hypothesized to generate and maintain psychopathology.

Methodological Problems and Findings of Family Interaction Research

Family therapy and research has, in the last two decades, expanded to include most psychological disorders. Despite this proliferation, there has been a surprisingly

small amount of empirical research testing the premises and assumptions underlying the therapy. Most of what has been published suffers from significant methodological defects. This section will examine the methodological roadblocks and review studies illustrative of various findings of family interaction research. The literature review will only be representative of the field and is not meant to be exhaustive.

Before turning to methodological issues, it should be noted that not all workers in the family field are in agreement with regard to the need for conducting empirical research. Cooper (1967), an associate of Laing, argued that empirical research cannot be done because the steps of investigation used in the natural sciences are invalid in studying human interaction. Natural science depends on a situation in which the observer does not disturb the observed object; however, in human interaction both the observed and the observer are mutually disturbed by the interaction. (Cooper here seemed to be writing about observations taking place in a therapy setting.) The natural scientist formulates a hypothesis in the form of: "if so and so occurs, then the observed object will do such and such," but humans have behavioral alternatives. Thus, this

form of hypothesizing is not accurate. In natural science a hypothesis is not considered valid if the experimental observations cannot be repeated. In the case of humans, one's life history cannot be repeated. While Cooper's objections to empirical studies are largely based on philosophic concerns, he is correct in regard to the methodological difficulties confronting the family experimenter. Cooper advocated clinical studies rather than empiric studies, but in this regard he is in the distinct minority.

When one reviews the literature in the family interaction field, the reader is struck by the issues which are unresolved and the findings which are widely variable. Riskin and Faunce (1972) reviewed the literature to that date and reached the following conclusions regarding methodological adequacy in the field:

1. Interdisciplinary isolation is striking . . . researchers are limited by the tradition of their field;
 2. the lack of replication studies is conspicuous;
 3. underlying interests, premises, and assumptions vary naturally from one researcher or tradition to another;
 4. significant variations in specific goals or purposes from one researcher to another;
 5. lack of comparability of sample populations;
 6. tendency to break away from categorizing families in terms of individual nosology;
 7. casualness in methodology;
 8. arguments continue about the possibility and desirability of doing quantitative and experimental studies vs. non-quantitative, naturalistic studies;
 9. use or misuse of certain terms, i.e., systems, process, communication, interaction.
- (pp. 369-371)

Additionally, these authors listed 21 methodological issues, 9 substantive issues, and a 26 page glossary of terms used in family interaction studies.

Jacob (1975) reviewed the literature and concluded that with very few exceptions, methodological weaknesses rendered the results of family interaction studies questionable. In addition to the criticisms of Riskin and Faunce, Jacob noted that the majority of studies failed to control for one or more of the following variables: various demographic characteristics of families; raters' knowledge of the family's diagnostic status; amount of agreement between judges as to the presence and frequency of the behavior to be rated; possible differences related to the sex of the child in the family; experimental and control families observed and assessed in the same experimental setting; comparable treatment or hospital status of experimental and control families.

Haley, in various articles, has probably presented the major methodological problems confronting family interaction researchers. His early observations remain valid and, in fact, the same problems have continued to plague the field. Haley (1959) commented on the problem of where and within what context family interaction research can take place.

The focus of a family study should be on the total family and on the interaction of parents and children with each other rather than on the interaction of family members with interviewers or testers. What a family member reports to an investigator about his relationship with another family member is only hearsay evidence of what actually takes place. To study the system of interaction in the family of a schizophrenic it is necessary to bring family members together over a period of time and directly observe them relating to one another. Inevitably the fact of observing the family introduces a bias into the data for they may behave differently when observed than when not observed. It would seem to be impossible to leave the observer out of this sort of study, and the problem is to include him in the situation in such a way as to maximize the information he can gain. The most appropriate type of observation would seem to be in the therapeutic context. There is serious doubt as to whether this type of family can be brought together without the therapeutic support. (p. 359)

Like Cooper, Haley thus raised the question of doing empirical research. However, Haley as well as other investigators have overcome this difficulty and have in fact found that families will cooperate with research.

Experimentation with families involves several additional methodological problems not typically encountered by the experimenter dealing with individuals. Again, Haley has covered these problems most comprehensively. The experiment with individuals is designed to obtain measures of some factor thought to be characteristic of people. A standard situation is created where the individual is exposed to a stimulus and his response is measured. The

only variable to be considered, therefore, is the difference recorded between individual subjects. As Haley (1962) suggested, this situation differs from the experimental situation with families:

When a shift is made from experimenting upon individuals to experimenting upon a relationship, a quite different procedure is necessary. One must create some standard context and place two or more people within it and measure their responses to one another. Then one must place two or more other people, presumably involved in a different type of relatedness, in the same situation and measure their responses. Whereas in individual experiments it is necessary to eliminate as much as possible the subject's response to another person, in experimenting with ongoing systems the typical response of one person to another must be measured. (p. 268)

Additionally, as Framo (1972) noted, interaction research focuses on circular, reciprocal feedbacks of behavior in which the behavior of others has to be taken into account. Whereas traditional research attempts to eliminate or hold constant variability and context, the family interaction researcher attempts to re-create typical, repetitive interchanges among family members and devises an experimental situation which promotes group coping in face-to-face interaction. As a result of these differences, the family interaction researcher is unable to use as precedent most of the work done on psychological experimentation.

Another significant problem is posed by sampling procedures. Experiments with individuals obtain samples of people on the basis of some characteristic such as age, sex, education, etc. There is no system of family classification differentiating families. This is, in fact, the goal of much of the family research. Families are identified by the characteristics of an individual member such as the presence (or absence) of schizophrenic symptoms. Aside from the problem of unreliability of psychiatric diagnosis, there are different classifications of schizophrenia, i.e. catatonic, paranoid, process, reactive, etc. The time interval since the diagnosis was made also presents a problem. For example, once diagnosed, is a person always schizophrenic?; if he has recovered from a psychotic episode should he be included?; can a person who is currently psychotic and hospitalized be classified with a person who is hospitalized but no longer showing overt symptoms? Ideally, the experimenter should have a pool of families containing a diagnosed schizophrenic member and another pool of families clearly not containing a schizophrenic member. He should then be able to choose randomly from each pool. However, this is clearly not the case. One must find families with a schizophrenic which are intact

and which are identified either through an institution or a clinician in private practice, and further, the family must "volunteer" to be tested. Random procedure is made impossible by this since families who come in may vary markedly from those who refuse. The same problem occurs in families without an identified patient. They may be either quite amiable or else having difficulties with which they hope to get help. This again is not a random sample.

A further problem elaborated by Haley (1962) is that of the experimental context:

It would be naive to assume that if two families are given the same verbal instructions for an experiment, they will be in the same experimental context. If a schizophrenic family is brought in feeling accused because something has gone wrong with their child and defensive about what will be shown wrong in their family, they are hardly in the same experimental context as a family coming in with no accusation of anything wrong but merely to be cooperative with some research.

Inevitably in a schizophrenic family any request that the parents be brought together with the patient is a suggestion that they have something to do with his illness. A contrast family without a patient cannot approach the experimentation with the same frame of reference. (This problem is quite separate from the question of whether a major characteristic of the schizophrenic family is some form of defensiveness, and therefore something to be measured with experimentation.) It is not possible to separate the performance in any experiment from the context in which the experimentation takes place, nor is it a simple problem to find a way to provide a "schizophrenic" and a "non-schizophrenic" family with the same context. If the context is not the same, performance differences are doubtfully valid. (pp. 274-275)

A final problem involves the finding of a testable hypothesis. Taking into account the operations of families in general and how the operations may differ in families with a schizophrenic member, Haley (1962) concluded that family experiments should conform to the following criteria:

1. The experiments must deal with the responses of the family members to each other rather than their individual responses to stimuli from the experimenter. The measure is of the system rather than the individuals within it, and so the experiment must require family members to interact with each other.

2. At least some of the experiments must be of such a nature that any one family will behave in a consistent way in that experiment over a series of trials. If one family behaves differently each time on the experiment, it is difficult to argue that two families who behave differently are really different.

3. The experiments must be of such a nature that it cannot be argued that intelligence, education, or manual dexterity of the family members was a major determinant in the results.

4. The experiments must be such that it cannot be argued that because one member is a schizophrenic the results of the experiment inevitably follow. For example, it should not be a task which the schizophrenic could not, or would not, participate in so that it could be said: "no one could do that task with him involved."

5. It must be a type of experiment which a family will participate in, willingly or not. That is, the task must be something everyone in the family can do.

6. The experiment must be of such a nature that it does not impose patterns on the family by forcing them to change under duress their typical patterns, unless measurement is being made of the ability of a family system to change under stress.

7. The experiments must involve multiple experiments to measure multiple factors in families. There are possibly no single differences between any one type of family and any other type.

8. The experiments must show extreme differences between types of families, granted the sampling problem in this sort of study. (pp. 281-282)

Additional problems may confront the family interaction researcher. Several studies (Farina, 1960; Garnezy, Farina, & Rodnick, 1960; Farina & Dunham, 1963; Rodnick, 1967) have indicated that families may differ as a function of the premorbid adjustment of the identified patient. Family interaction may differ also as a function of the sex of the identified patient (Hutchinson, 1969; Becker & Siefkes, 1969). The possible demand characteristics of the experimental setting represent an unknown variable (Framo, 1972) as does any possible difference in parental interaction with the identified patient as opposed to their interaction with a well sibling (Haley, 1972).

Some investigators have attempted to study family interaction by asking identified patients to recall their experience in the family (Garnezy, Clarke, & Strickner, 1961; Cicchetti, 1967; Cicchetti, Klein, Fontana, & Spohn, 1967; Cicchetti & Ornsten, 1968). Others have interviewed parents of patients to ascertain the types of interaction which had occurred in the family (Freeman, Simmons, &

Bergan, 1959; Lu, 1962; Beavers, Blumberg, Timken, & Weiner, 1965). In addition to problems such as selective recall, deliberate distortion, and social desirability, all of which affect the reliability and validity of studies of this nature, Jackson (1967) has noted:

Whatever an individual says about his past is also a comment on, or a way of handling, the interviewer; that is, the 'history' is a metaphor about the present relationship. Such methods therefore make impossible the distinction between cause and effect which they seek to clarify. (p. 143)

The findings of these studies are therefore dubious.

Another method of studying families has involved the administration of psychological tests to individual family members to determine if parents' personality characteristics could be matched to the identified patient (Jackson, Block, Block, & Patterson, 1958; Block, Patterson, Block, & Jackson, 1958) and to predict interaction patterns on the basis of the personalities of individual family members (Sohler, Hilsberg, Fleck, Cornelison, Kay, & Lidz, 1957; Singer & Wynne, 1965; Handel, 1967). These methods have been criticized based on interpretation bias (Rabkin, 1965) and because the responses of individuals do not accurately reflect the nature of the family system (Haley, 1964; Handel, 1965). Psychological tests have, however,

effectively been used to generate interaction in the context of family members being required to agree on a response (Bauman & Roman, 1966; Ferriera, Winter, & Poindexter, 1966; Friedman & Friedman, 1970; Levy & Epstein, 1964; Singer, 1966).

It is reasonably clear that in order to test hypotheses involving family interaction, the experiment must involve the family members actually interacting in a controlled setting. In addition to the difficulties posed by Haley, the problem of how to generate the interaction is a central one.

There are a variety of methods to generate family interaction in the experimental situation, the choice of which depends on the interests of the experimenter. A commonly used method (Ferriera & Winter, 1965, 1968; Hutchinson, 1969; Cheek, 1965; Caputo, 1963; Lerner, 1965, for example) has been the Revealed Differences Technique (Strodtbeck, 1951, 1954). This method involves family members individually responding to a forced-choice questionnaire after which they are required to conjointly reach agreement on items on which they differed when individually completing the questionnaire. Strodtbeck (1972) stated:

The technique stimulates in a systematic way a revealed difference in a normal family context . . . a sample of behavior on the part of the family which is revealing and which is at the same time not so excessively revealing that we must accept responsibility for the family by providing further service. (p. 200)

The questions can involve any issues which the researcher chooses although Framo (1965) has suggested that it should involve controversies that the family is struggling with rather than "polite play acting." He indicated that the family, like individuals, has defenses and will not reveal "secrets" for fear of retaliation. The data obtained from the interaction can be scored and quantified in accordance with the interests of the experimenter. Framo (1965) and Mishler (1966) have specifically recommended the use of the Revealed Differences method to generate interaction.

There are few studies addressed to the issue of which methods of generating interaction are the most productive. Levinger (1963) compared the findings of subjective questionnaire and objective laboratory experiments. He found that the questionnaires were distorted willfully or by inability to remember. The laboratory experiments produced artificial behavior but he notes that it was much more difficult for the family to distort the process of their interaction than it was the content. Bodin (1969)

used delinquent, "non-delinquent," and synthetic (strangers) family triads and gave them a Revealed Differences type of task and a "game." He found that "task relevance" was important in determining behavioral differences and concluded that the Revealed Differences Technique was superior to the "game" in generating pertinent interaction. He also noted that the synthetic families were much less efficient than the real families because they had to develop interaction "norms" which the real families had previously developed. Finally, Jacob and Davis (1973) compared families on three tasks and found no difference in the patterns of interaction produced. The studies cited suggest that the most relevant results are obtained when the task used to generate interaction has meaning to the family. Cromwell, Olson, and Fournier (1976) reviewed a large number of interaction generating techniques and concluded that conflict resolution tasks such as the Revealed Differences Technique produced better results than more artificial tasks.

There is evidence that four to five minutes of family conversation can differentiate clinical from asymptomatic families and reveal the usual patterns of an interactive system. For example, Watzlawick (1966) developed a

"Structured Interview" for clinical use which consisted of brief segments of interaction. The purpose of the interview was "to create content and process deliberately." First, each family member was asked what the "main problem" in the family was, following which the family was told that their answers were discrepant and were asked to reach a conjoint decision regarding the main problems. ("Problems" was plural because in the therapy context it was meant to denote that the identified patient was not the problem.) Secondly, the family was asked to "plan something together" (Riskin, 1964). Thirdly, the parents were asked to discuss with each other how they met. Fourthly, the parents were asked to discuss the meaning of a proverb and teach it to the children (see Sojit, 1969, 1971, discussed below). Lastly, the family was involved in a conjoint "game" designed to assess blaming and scapegoating. Empirical data on this latter part of the interview have been presented by Watzlawick, Beavin, Sikorski, and Mecia (1970), who reported significant differences between family types. The value of Watzlawick's interview lies in the involvement of the family in varied interactions and in the different areas of the family process which can be analyzed in relatively brief segments.

Sojit (1969, 1971) found significant differences in the interaction of parents of normal and cystic fibrosis children compared to parents of schizophrenic, delinquent, and ulcerative colitis children based on four to five minute segments. The latter three groups of parents also differed from each other. Jackson, Riskin, and Satir (1961) blindly analyzed a five minute segment of the parents of a disturbed child interacting and formulated the dynamics and diagnosis of the child and family attaining close agreement with the family's therapist. Riskin (1963) in a discussion of family interaction research methodology, indicated that five minute segments of family interaction had proven sufficient in terms of revealing typical interaction patterns in families studied at the Mental Research Institute. Hassan (1974) found significant differences in the interaction patterns of normal and abnormal families as based on three to five minute transcripts of family interaction. There is, therefore, clear agreement that brief segments of family interaction will reveal differences between families and that these differences reflect the typical interaction of the families.

In doing research with families in which one of the members is exhibiting psychiatric symptoms, a significant

problem lies in deciding whether the results of family interaction might be a function of the pathology of the identified patient. Haley (1967b) has noted that families without the schizophrenic patient present were more deviant than those in which the patient was present. Winter and Ferreira (1967) noted that the kind of interaction was significantly related to the diagnosis of the patient. This was especially so in the schizophrenic families where the patient showed less verbal communication. However, in a later study, Ferreira and Winter (1968) reached the conclusion that the greater silence in schizophrenic families was a function of all the family members. Other studies (Friedman & Friedman, 1970; Sojit, 1969, 1971; Stabenau, Turpin, Werner, & Pollin, 1965, for example) have found that families without the identified patient child interacted in a measurably deviant fashion. Haley (1964) noted:

The muteness of a disturbed child can be seen as a product of the ways the parents deal with him and he with them, and so a measure which includes his muteness is measuring the habitual operational patterns in that family. What the individual does is not separable from what the other two individuals are doing and so a measurement that implies independent individual behavior is doubtfully legitimate. (p. 61)

This seems an unresolvable problem, but it would seem reasonable that if one is to measure family interaction, then

the behavior of the identified patient is part of that interaction and should, therefore, be part of the measurement.

It is evident from the studies cited that family patterns remained stable over a series of tasks, but do these measures have reliability over time; for if not, then the studies of family interaction have little validity. Several studies have shown that the measurements are stable over time. Haley (1964) retested a small part of his sample and found little change although he presented no statistics. Again presenting no statistics, Haley (1967b) retested a small number of normal and abnormal families after six months and found little difference. Ferreira and Winter (1968) retested ten normal and ten abnormal families after six months and obtained correlations significant from the .001 to .01 level. Murrell and Stachowiak (1968) retested families after a twelve to fourteen week period on four different tasks and obtained a correlation significant at the .01 level with the earlier ratings. There is thus significant support for the hypothesis that families operate in rigid patterns and that these patterns can be measured by family interaction studies. The stability of fami-

ly interaction measures over time also provides indirect support for the concepts of homeostasis and redundancy.

One of the primary reasons for family interaction research is the need to differentiate various types of family behaviors in order to arrive at a family diagnosis. Enough is not yet known about the nature of family interactions to achieve this. However, a few investigators have been able to statistically separate normal from schizophrenic and abnormal families on the basis of rather limited empirical behaviors. Haley (1964, 1967b) constructed a scale based on "who talks to whom." Normal families fell closer to the random point (family members addressing an equal number of speeches to all other family members) with very few schizophrenic families below the median point. This measure was shown to have an adequate test-retest reliability and thus could be a reliable method of differentiating families in terms of some rather narrow behavior. Ferreira and Winter (1965) constructed a scale combining spontaneous agreement (all family members choosing the same alternative on a questionnaire), decision time (amount of time it takes a family to arrive at a mutual decision), and choice fulfillment (family must make a choice which reflects the preferences of all members). Only eleven per-

cent of the abnormal families were above the median for the normal families. Unfortunately, these studies provided no differentiation of pathological families from one another.

A useful method of differentiation was presented by Winter and Ferriera (1970) although again, there was no differentiation of pathological families. They performed a factor analysis of data obtained in previous studies. The variables used were obtained from three sources: extra-test demographic variables such as age of the child and education of the parents; findings from the interactions generated by the Revealed Differences Technique; and findings from the interactions generated by TAT cards. Thirty-one variables were analyzed and the seven with the highest loadings were presented. The factors which most differentiated normal from abnormal families were:

1. A pattern of good adjustment from the middle class frame of reference. The parents are well educated; their child has been judged normal. The family triad shares common interests even before getting together to work on a joint task, . . . family members state their opinions clearly and validly, . . . their individual wishes influence the family's conjoint decisions.
2. A pattern of efficiency in which the family gets the task over with as quickly as possible. . . . This pattern of speed and task orientation may represent a defensive maneuver by hostile families to get the job over with quickly and avoid interaction.

3. A pattern of verbal underproduction in which the family spends a larger proportion of its time sitting in silence rather than dealing overtly with the tasks at hand.
 4. An emotional rather than a task-orientated approach to solving family problems.
 5. A pattern of performance in which the family members verbally interact with each other on the TAT, show a certain evenness of responding to each other, and produce final stories with themes of hostility and general pathology. . . . Over all, the pattern seems to be one of active, shared participation, but with a pathologic product, indicating probably some displacement of family-based hostility onto the TAT or a sarcastic reaction to the testing situation itself.
 6. Family's low scores on the composite indexes of normality derived from the questionnaire, i.e., the family members show less spontaneous agreement, share less information during discussion, sit in silence more often, take longer to reach decisions, and their decisions less often reflect the choices of the individual family members.
 7. The Bales IPA scores indicating dependency. Specifically, instead of offering opinions and suggested interpretations of the TAT cards, the family would spend its time asking each other questions about how to proceed, what the others thought about the cards, etc.
- (pp. 56-61)

The authors noted that only the first factor is heavily weighted with social class and diagnostic variables; thus, these factors present a method of making finer discriminations between families than the categories "normal vs. abnormal" or "normal vs. schizophrenic." Further studies of this nature, as well as studies of the specific factors, are needed to further delineate patterns of family interaction leading to a family-based diagnostic procedure.

A recent study of the clinical and demographic characteristics of 110 families in a community mental health center delineated four family constellations (Gartner, Fulmer, Weinshel, & Goldklank, 1978). These investigators found:

The typical identified patient in Constellation A (IP spouse) . . . is likely to be a woman, usually in her thirties, and suffering from a reactive psychosis or depression, who first experienced her symptoms when she was in her late twenties. The typical identified patient in Constellation B (IP child of intact couple), however, is almost always male, usually in his mid-twenties, who had experienced the onset of a chronic schizophrenia either in childhood or adolescence. In Constellation C (IP child of single parent), the identified patient is again female, usually under thirty, as likely to be suffering from a chronic as from a reactive or character disorder, and with an onset of symptoms during adolescence. Identified patients in Constellation D (IP single adult) are likely to be females over thirty with a chronic disorder and an onset of symptoms after age thirty. (p. 53)

While this study did not examine the interaction patterns of the families, the identification of family constellations associated with a diagnostic category may lead to testable hypotheses regarding the meaning of symptoms in the family system.

Haley (1960) noted that:

No differentiation of the family of the schizophrenic from other types of families is sufficient to argue that schizophrenia is of family origin unless the function of schizophrenic behavior in the family is clearly described. (p. 467)

The question of whether the family is reacting to the pa-

tient's behavior or the patient's behavior is a result of the family's behavior can only be answered by a longitudinal study. Currently, enough is not known about interactional processes, about the various styles of family interaction, or about the styles of interaction related to various forms of psychopathology. Members of the MRI group (Jackson 1959; Lederer & Jackson, 1968; Haley, 1963, for example) have attempted to classify marital relationships on the basis of the way in which messages are exchanged defining the nature of the relationship. This could provide an initial base for studies designed to classify relationships.

This review suggests that there are several areas of agreement among family researchers. For example, fragmentation and unclarity are associated with seriously disturbed, usually schizophrenic, families. The ratio agreement/ disagreement is higher in normal families as are variables such as humor, laughter, support, and positive affect. Role confusion and reversal are most often found in abnormal families. The point is that it is possible to empirically define areas in which the interaction in families without a member exhibiting psychiatric symptoms differs in measurable ways from the interaction in families in which a

member does exhibit psychiatric symptoms. Further, it is possible to delineate various interactional styles which differentiate categories of abnormal families. Family interaction studies have demonstrated that relatively brief periods of interaction can identify patterns which are stable over a series of tasks and over a period of time. If pathogenic patterns of interaction can be defined and identified, therapeutic techniques could be improved and primary prevention could become possible.

Bandler and Grinder's Linguistic Model

There are a number of ways in which the objective, empirical world differs from an individual's perception or representation of the world. For example, neurological constraints limit what is seen, heard, felt, or otherwise experienced and each person's individual history and experiences impose constraints in the form of interests, habits, rules for behavior, etc. The former constraints are universal for human beings while the latter constraints are unique to each individual. Intermediate to these are social constraints or the socially agreed upon fictions and accepted ways of perceiving the world. Language is the most commonly recognized social constraint (Bandler &

Grinder, 1975). For example, the richness of experience available to an individual is associated with the number of distinctions made available to him by his language system. Therefore, the common language shared by a culture constitutes another way in which a person's model of the world will necessarily differ from the world itself.

Human language serves two major functions: it is a system of responses by which individuals communicate with each other; and it is a system of responses that facilitates thinking and action for individuals (Carroll, 1964). Put another way, language is used to represent one's experience or perceptions of the world as in reasoning, fantasizing, or thinking and it is used to communicate one's representation or model of the world to others as in talking, writing, or singing (Bandler & Grinder, 1975). Therefore, language structures not only determine how one's experiences or perceptions of the world are communicated to others, but also determines how the experiences or perceptions are conceptualized or modeled intrapsychically.

Korzybski (1948) noted that language is a "map," or a way of symbolizing the "territory" of the world. The structure of a language reflects the assumptions about the world made by those who evolved the language such that

persons read, unconsciously, into the world the structure of the language they use.

If words are not things, or maps are not the actual territory, then, obviously, the only possible link between the objective world and the linguistic world is found in structure, and structure alone. The only usefulness of a map or a language depends on the similarity of structure between the empirical world and the map-languages. If the structure is not similar, then the traveler or speaker is led astray, which, in serious human life-problems, must always become eminently harmful. If the structures are similar, then the empirical world becomes "rational" to a potentially rational being, which means no more than that verbal, or map-predicted characteristics, which follow up the linguistic or map-structure, are applicable to the empirical world. (Korzybski, 1948, p. 61)

Thus, not only do people use language to structure their model of the world, but, the models people create are based on language structures which are not, to varying degrees, congruent with the empirical world. Different models of "reality" and of the behavioral and experiential choices available result in persons perceiving themselves as having limited options in terms of coping or adjusting to the daily events of their lives (Watzlawick, 1976).

Bandler and Grinder (Bandler & Grinder, 1975; Grinder & Bandler, 1976) have presented a meta-model for therapists to use in assisting patients to expand their models of the world or create behavioral and experiential alternatives for themselves. The meta-model encompassed both verbal

and non-verbal behaviors and provided specific interventions which therapists have available for helping the patient(s) to expand his/her/their model(s) of the world. Only the portion of Bandler and Grinder's meta-model related to verbal behavior is relevant in the present context. Furthermore, only the specific forms of linguistic structures postulated by the meta-model which result in limiting persons' options, and not the specific interventions available to therapists, will be presented.

The linguistic portion of the meta-model is based partially upon the grammatical theory of Chomsky (1957, 1965). "Transformational" or "generative" grammar has gained wide acceptance in the field of psycholinguistics (Vetter, 1969; Deese, 1970; Bever, 1970; Grinder & Elgin, 1973, for example) and the basic tenets of the theory have been supported experimentally (Deese, 1970; Bever, 1970; Grinder & Elgin, 1973, for example). Although a presentation of the technical aspects of the theory is beyond the scope of this paper, concepts relevant to Bandler and Grinder's adaptation will be presented.

When humans communicate verbally, they are not usually conscious of the process of selecting words to represent their experience and are almost never conscious of the way

in which selected words are ordered and structured. However, the structure of language can be understood in terms of regular patterns or rule-governed behavior. Based on Chomsky's work, transformational grammarians have developed an explicit model describing the patterns of language behavior or the way in which people represent or communicate their experience. The model encompasses

a wider notion of semantics which reintroduces human agents and their relationships, dealing with issues such as the relationships between emotional affect and form of expression, the form of linguistic production as an indicator of systems of interpersonal relations. (Grinder, 1974, p. 6)

Chomsky (1957, 1965) made the assumption that rules for forming linguistic structures can be studied independently of content. Native speakers of a language have consistent intuitions about their language even though they may be unable to explicitly state the underlying rules (Chomsky, 1965). Bandler and Grinder (1975) selected three major categories of intuition which all native speakers of a language have available to them as relevant to the meta-model

- I. Well-Formedness: The consistent judgments which native speakers make about whether or not groups of words are sentences of their language. . . .
- II. Constituent Structure: The consistent judgments native speakers make about what goes together as a unit or constituent inside a sentence of their language. For example, in the sentence

The Guru of Ben Lomond thought Rosemary was at the controls.

the words The and Guru go together in some way as a unit that Guru and of do not.

III. Logical Semantic Relations: The consistent judgments which native speakers make about the logical relations reflected in the sentences of their language.

1. Completeness: Native speakers, when presented with a verb of their language, are able to determine how many and what kinds of things between which this verb connects or describes a relationship. For example, the verb kiss in English implies a person kissing and a person or thing being kissed.

2. Ambiguity: Native speakers recognize that a single sentence such as

Investigating FBI agents can be dangerous.

. . . . communicates two distinct meanings.

3. Synonymy: Native speakers recognize that both of the following sentences have the same meaning or convey the same message.

Sandy looked up the number.

Sandy looked the number up.

4. Referential Indices: Native speakers can determine whether a word or phrase picks out a particular object in their experience such as my car or whether it identifies a class of objects: car. Furthermore, they make consistent judgments about whether two (or more) words refer to the same object or class, e.g., the words Jackson and himself in the sentence

Jackson changed himself.

5. Presupposition: Native speakers can determine what the experience of the speaker is for him to say a sentence. For example, if I say the sentence

My cat ran away.

you are entitled (have reason) to believe that, in my experience of the world, it's true that

I have a cat. (Bandler & Grinder, 1975, pp. 25-27)

Within the transformational model, each sentence is analyzed at two levels which correspond to two of the con-

sistent kinds of intuitions which native speakers have. Words which are grouped intuitively into a single sentence (II above) are labeled Surface Structure. Thus the sentence "The woman bought a truck." is a Surface Structure. The intuition which native speakers have about what a complete representation of the meaning or logical semantic relation (III above) of the sentence would be is labeled Deep Structure. The Deep Structure for the above Surface Structure could be "The woman bought a truck from someone for some money."

When humans wish to communicate their representation, their experience of the world, they form a complete linguistic representation of their experience; this is called the Deep Structure. As they begin to speak, they make a series of choices (transformations) about the form in which they will communicate their experience. These choices are not, in general, conscious choices. . . . Our behavior in making these choices is, however, regular and rule governed. The process of making this series of choices (a derivation) results in a Surface Structure--a sentence or sequence of words which we recognize as a well-formed group of words in our language. This Surface Structure itself can be viewed as a representation of the full linguistic representation--the Deep Structure. The transformations change the structure of the Deep Structure--either deleting or changing the word order--but do not change the semantic meaning. (Bandler & Grinder, 1975, p. 35)

However, as will be demonstrated, some transformations may result in Surface Structures which do not fully represent

the Deep Structure from which they were derived. A brief digression is first in order.

Bandler and Grinder (1975) noted that there are at least three ways in which humans manipulate symbols in order to create models of the world. While these mechanisms are necessary, in fact essential, to human growth and creativeness, they can, paradoxically, result in the creation and maintenance of an impoverished model of the world. These mechanisms are Generalization, Deletion, and Distortion.

Generalization is the process by which elements or pieces of a person's model become detached from their original experience and come to represent the entire category of which the experience is an example. Generalization is essential in coping with the world. For instance, after receiving a burn from a hot stove, it is useful to learn not to touch hot stoves but it can be limiting if one generalizes to the extent that he considers hot stoves as dangerous and will not even approach them.

Deletion is a process by which selective attention is paid to certain dimensions of experience and other dimensions excluded. In a room full of people it is useful to filter out voices other than the voice of the particular

person to whom one is listening. However, using the same mechanism, people can filter out information which is important to them.

Distortion is a process which enables people to make shifts in their experience of sensory data. For example, fantasy enables one to prepare for experiences before they occur. Art and literature involve the ability to distort reality. However, people can distort experience in such a way as to limit and impoverish their model of the world.

Each of these processes, Generalization, Deletion, and Distortion, can be represented linguistically within the transformational model. When these processes are applied to Deep Structure, the resultant Surface Structures do not fully represent the Deep Structure from which they were derived. Thus, not only does the listener receive an impoverished or incomplete representation of the speaker's model, but the speaker's model itself is impoverished as it is based upon an inaccurate linguistic map, to borrow Korzybski's term. Bandler and Grinder have also identified a fourth dysfunctional linguistic form, Semantic Ill-Formedness, which results in inaccurate Surface Structures. The linguistic representation will now be presented.

Generalization

Generalizations may impoverish a person's model by causing loss of detail and richness in the original experience and thus prevent him from making distinctions which would give a fuller set of alternatives in dealing with any particular situation. One form of Generalization which is represented linguistically involves non-process words and phrases (nouns and noun phrases) which lack referential indices, that is, fail to refer to a specific person or thing in the world. For example, in the Surface Structure

Nobody pays any attention to what I say.

the words "nobody" and "what" fail to identify specific people or things. Similarly, in the Surface Structure

Everybody feels that way sometimes.

the words "Everybody," "that way," and "sometimes" lack referential indices.

A second form of Generalization involves incompletely specified verbs or process words. According to Bandler and Grinder (1975), all verbs are incompletely specified to varying degrees. For example, in the Surface Structure

My mother hurt me.

the listener does not know what the verb "hurt" means.

"Hurt" could mean physically or psychologically and could mean the "hurt" was accomplished with a word, a gesture, or a knife. The degree of specificity depends on the meaning of the process word and the amount of information presented in the sentence in which the verb occurs.

Distortion

The modeling process of Distortion is represented linguistically when an ongoing process is transformed to an event in the Surface Structure representation. This representation of experience is impoverishing insofar as the person loses control of an ongoing process by representing the process as an event which is fixed and for which no change is possible. The linguistic process is called "nominalization" and occurs when a process word in the Deep Structure is transformed to an event word, or noun, in the Surface Structure. In the Surface Structure

My divorce is painful.

the noun "divorce" stems from a verb and thus transforms the process of divorcing to an event. Similarly, in the Surface Structure

Your refusal to leave here forces my departure.

the nouns "refusal" and "departure" are nominalizations.

A second form of Distortion identified by Bandler and Grinder (1975) are presuppositions. These are statements occurring within a Surface Structure which must be accepted as true if the Surface Structure is to make sense to the listener. For example, if the Surface Structure

I'm afraid that my son is turning out to be as lazy as my husband.

is to make sense to the listener, it must be accepted as true that

My husband is lazy.

Bandler and Grinder (1975) in the appendix listed 29 "syntactic environments" in which presuppositions may occur. In a linguistic sense most Surface Structures contain a presupposition of one form or another.

Deletion

Bandler and Grinder (1975) identified several linguistic representations of the modeling process of Deletion which removes, in the Surface Structure, a portion of the full Deep Structure representation. The result is a communication which to the listener is impoverished insofar as it is an incomplete representation of the speaker's model and which is impoverished to the speaker insofar as it reduces the options available to him.

The first form of Deletion involves process words which lack a noun argument or object. For example, in the Surface Structure

I'm scared.

the person or object of which the speaker is scared has been deleted. A more complex example would occur in the Surface Structure

My husband claimed he was frightened.

In this example the information regarding to whom the claim was made and of what or who he was frightened was deleted.

The second form of Deletion may occur when Deep Structure process words are represented as adjectives which modify a noun in the Surface Structure. An example of this is the Surface Structure

I don't like unclear people.

which is closely associated with the Surface Structure

I don't like people who are unclear.

In both of these Surface Structures, the portion of the Deep Structure which conveys information regarding to whom and about what the people are unclear has been deleted.

Bandler and Grinder (1975) identified a third form of Deletion as "Real Compared to What?" This category involves the use of comparatives and superlatives in

Surface Structures in which the set of comparison in the full Deep Structure representation is deleted. In the Surface Structures

She is more interesting to me.
 She is the most interesting to me.

the information which states who or what she is "more interesting" than or of what group she is the "most interesting" has been deleted.

Another form of deletion occurs in the case of "ly" adverbs in the Surface Structure when the adverbs have been derived from verbs in the Deep Structure. The Surface Structure

My parents obviously dislike me.
 can be paraphrased as

It is obvious that my parents dislike me.
 In this case, the deleted information is to whom it is obvious.

A fifth class of Deletion involves what Bandler and Grinder (1975) called "Modal Operators." These are Surface Structures which contain statements of necessity or possibility or in other words, rules and generalizations. Specifically, in the Surface Structure

It is necessary to behave properly in public.
 the information concerning the consequences of not behaving

properly is deleted. Similarly, in the Surface Structure

I am not able to express myself.

the information which states what prevents the act is deleted. These deletions limit the options a person has available to him.

Semantic Ill-Formedness

Lastly, Bandler and Grinder (1975) have identified three kinds of Surface Structures which fall into a general category of Semantic Ill-Formedness. While these are not direct linguistic representations of the modeling processes of Generalization, Deletion, and Distortion, they impoverish a person's model insofar as they limit his options to act.

The first of these classes is labeled "Cause and Effect." These Surface Structures state the speaker's belief that one person or set of circumstances performs some action which necessarily causes some other person to experience some emotion or inner state. An example of this occurs in the Surface Structure

You make me angry.

Closely related to this is the Implied Causative "but." In these Surface Structures the conjunction "but" functions to identify what the speaker considers as the

reason or condition which makes something he wants impossible or which makes something he doesn't want necessary. Examples of "but" as an Implied Causitive occur in the following Surface Structures

I want to leave home but my father is sick.
I don't want to get angry but she is always blaming me.

Finally, Bandler and Grinder (1975) presented Mind Reading as a class of Semantic Ill-Formedness. These Surface Structures relate the speaker's belief or claim that one person can know what another person is thinking or feeling without a direct communication on the part of the second person. These Surface Structures leave people little choice as to their behavior since they have already decided what the other people involved think and feel. An example of this is the Surface Structure

Henry is angry with me.

Overall, many of the dysfunctional and impoverishing language structures identified by Bandler and Grinder (1975) are familiar to therapists representing a wide variety of therapeutic schools. The interventions presented by Bandler and Grinder (Bandler & Grinder, 1975; Grinder & Bandler, 1976; Bandler et al., 1976) are used to some extent in each form of therapy. The model is unique insofar as it is based on intuitions available to every native

speaker of a language and insofar as it deals with process independent of content.

As noted, transformational grammar has been accepted in the field of psycholinguistics, particularly in the study of language acquisition and development (Vetter, 1969; Deese, 1970). Although psycholinguists have studied speech and language in various forms of psychopathology (Vetter, 1969, for example), the present writer found no research which utilized the transformational model in general or Bandler and Grinder's model in specific. One exception to this was Troemel-Ploetz (1977) who analyzed an interchange occurring in family therapy on the basis of transformational theory and demonstrated one way in which change occurs in the therapeutic context. Cheek and Anthony (1970) found differences between normal and schizophrenic families' usage of personal pronouns but this was not based on transformational theory. No literature pertaining to specific language structures (as opposed to more general concepts such as disqualification, blaming, etc.) in family interaction was found.

Summary

In this chapter a theory which postulated ongoing family interaction processes as the etiological basis of psychological disorders has been presented. The theory relied heavily upon the communicational patterns of the family to explain how symptoms are developed and maintained within the family context. While research has demonstrated that families with a disturbed member interacted in ways which differed from families without a disturbed member, the specific nature of these differences has been somewhat elusive. This in part has stemmed from the abstract nature of the theory.

Among many methodological problems, family interaction research has been plagued with difficulties in terms of experimentally operationalizing the abstract theoretical concepts which underlie family therapy. One result of this difficulty has been that findings are either quite minute or so global that the interaction process is obscured. There is a need for intermediate constructs to link the minute findings with the findings which are of a more global nature.

Bandler and Grinder's linguistic model may provide such an intermediate link. Their model is concrete and

amenable to operational definition and is related to process, not content. Based upon the theory of family interaction which has been presented, the findings of family interaction research, and the theoretical argument of Bandler and Grinder's model, it is reasonable to hypothesize that families who express dissatisfaction with their current intrafamilial relationships would demonstrate dysfunctional linguistic structures in their interaction to a greater extent than would families who are satisfied with their current intrafamilial relationships.

CHAPTER III

PURPOSE AND OBJECTIVES

The primary purpose of this study was to determine the usefulness of Bandler and Grinder's (1975) linguistic model in family interaction research. Therefore, it was first necessary to determine the extent to which dysfunctional language structures occurred in the Surface Structures of members of "dissatisfied family"¹ triads consisting of father, mother, and child as compared to "satisfied family" triads. Therefore, it was hypothesized that:

1. Dissatisfied family triads will use Semantic Ill-Formedness, Distortion, Deletion, and Generalization to a significantly greater extent than will satisfied family triads.²

¹Families were given the Family Life Questionnaire (FLQ) to determine their dissatisfaction or satisfaction with their current intrafamilial relationships. The instrument and procedure will be explained in the data and instrumentation section of the following chapter.

²Hypotheses 1 through 4 are based on the total occurrence of the four categories of dysfunctional linguistic structures.

If dissatisfied family triads in fact used dysfunctional language to a greater extent, it was considered necessary to demonstrate that the entire family contributed and that the results were not solely a function of a single family member. Therefore, it was hypothesized that:

2. Fathers in dissatisfied families will use Semantic Ill-Formedness, Distortion, Deletion, and Generalization with significantly greater frequency than will fathers in satisfied families.

3. Mothers in dissatisfied families will use Semantic Ill-Formedness, Distortion, Deletion, and Generalization with significantly greater frequency than will mothers in satisfied families.

4. Children in dissatisfied families will use Semantic Ill-Formedness, Distortion, Deletion, and Generalization with significantly greater frequency than will children in satisfied families.

Pilot results³ suggested that the occurrence of each of the four main categories was not consistent over the course of the family discussion. In other words, it ap-

³A pilot study was done and is reported in the following chapter.

peared that Semantic Ill-Formedness, for example, might not occur with consistent frequency if consecutive sets of Surface Structures were examined. It was considered possible that consistency, or lack of consistency, may be a characteristic which differentiates satisfied and dissatisfied families. In order to explore these possibilities, the following hypotheses were tested:

5. Dissatisfied family triads will differ from satisfied family triads in the consistency with which Semantic Ill-Formedness is used in the linguistic Surface Structure when three sets of 50 consecutive Surface Structures are examined.
6. Dissatisfied family triads will differ from satisfied family triads in the consistency with which Distortion is used in the linguistic Surface Structure when three sets of 50 consecutive Surface Structures are examined.
7. Dissatisfied family triads will differ from satisfied family triads in the consistency with which Deletion is used in the linguistic Surface Structure when three sets of 50 consecutive Surface Structures are examined.

8. Dissatisfied family triads will differ from satisfied family triads in the consistency with which Generalization is used in the linguistic Surface Structure when three sets of 50 consecutive Surface Structures are examined.

Lastly, if Hypothesis 1 was true, it was also necessary to explore the extent to which satisfied and dissatisfied family triads can be differentiated on the basis of each of the four main categories. It was therefore hypothesized that:

9. Dissatisfied family triads will differ from satisfied family triads in the extent to which Semantic Ill-Formedness is used in the linguistic Surface Structure.

10. Dissatisfied family triads will differ from satisfied family triads in the extent to which Distortion is used in the linguistic Surface Structure.

11. Dissatisfied family triads will differ from satisfied family triads in the extent to which Deletion is used in the linguistic Surface Structure.

12. Dissatisfied family triads will differ from satisfied family triads in the extent to which Generalization is used in the linguistic Surface Structure.

CHAPTER IV

METHODS AND PROCEDURES

Sample and Population

The accessible population was English speaking, native American families residing in Logan and the surrounding area who (1) consisted of the natural parents and at least one child between the ages of 14-18 residing together and (2) who volunteered for the study. "Dissatisfied family" triads were defined as those family triads which, in addition to characteristics (1) and (2), obtained Family Life Questionnaire (FLQ) scores at least one half standard deviation below the mean FLQ score of families participating in the study.¹ "Satisfied family" triads were defined as those family triads which, in addition to characteristics (1) and (2), obtained FLQ scores at least

¹As noted in Chapter II, there are no instruments available with which to classify families. The FLQ was selected for the present study to avoid labeling families solely on the basis of the characteristics of one family member. The FLQ was not designed to differentiate "normal" from "abnormal" families and therefore families within one half standard deviation of the mean were eliminated in an attempt to obtain two groups of families who differed in the amount of satisfaction with which they perceived their intrafamilial relationships.

one half standard deviation above the mean FLQ score of families participating in the study.

The target population is English speaking, native American families with the characteristics described above. The accessible population is related to the target population inasmuch as there is no evidence that family interaction variables are associated with geographical location, religious affiliation, or size of the city of residence (Jacob, 1975).

Letters which requested families to volunteer for the study (see Appendix A) and a demographic questionnaire (see Appendix B) were mailed to every fifth family in the sophomore and junior classes of the Logan High School directory. Those families who responded and conformed to the characteristics above were called and asked to come to the University to participate. Twenty-nine family triads were obtained in this fashion.

In order to increase the potential number of dissatisfied families, a letter was sent to local psychotherapists (see Appendix C) asking them to refer families and providing material for them to give to potential referral families (see Appendix D). Two families were obtained in this fashion.

Therefore, 31 family triads participated in the study. Six family triads fell into the "satisfied" group and seven into the "dissatisfied" group. One dissatisfied family produced an insufficient number of Surface Structures (120 in a half hour of interaction) and their data was excluded from the analysis.

The six satisfied and six dissatisfied family triads were compared by t tests on a number of demographic variables and the only significant difference was the mothers' age (see Table 1). It was concluded that the families are comparable on all variables noted by Jacob (1975) which influence family interaction except birth order of the child.

Design

The design employed required all families to undergo the same experimental procedure. The concensus among researchers is that the use of a control group is not indicated in family interaction studies because enough is not yet known about family interaction variables to know what to control (Haley, 1972; Framo, 1972; Riskin & Faunce, 1972). The use of comparison groups, as employed in this study, has been suggested (Riskin & Faunce, 1972). The

Table 1
Demographic Characteristics of
Experimental Families

Family Characteristic	Dissatisfied ^a	Satisfied ^b
Fathers' Age	40 (37-43) ^c	44 (39-51)
Mothers' Age	39.166 (36-41)	41.833 (39-46)
Childrens' Age	15.833 (15-16)	15.666 (14-17)
Fathers' Education	15.833 (12-21)	17 (12-20)
Mothers' Education	14.666 (12-17)	15.166 (12-17)
Childrens' Education	10.166 (9-11)	10 (9-11)
No. of Years Married	18.5 (17-21)	20.833 (17-24)
Sex of Child		
Male	2	2
Female	4	4
Religion		
LDS	5	5
"Other"	1	1
Income		
8,000-12,000	2	1
12,000+	4	5

Note. n = 6 in each group.

^aFLQ scores 126-203.

^bFLQ scores 233-278.

^cNumbers in parentheses indicate the range.

fact that families had to volunteer for the study and the fact that they were assigned to groups based on their FLQ scores precluded obtaining a truly random sample. The motives a family may have had for volunteering represent an additional unknown variable and in fact, families who volunteer may have many different characteristics than those who do not. Furthermore, imponderable variables such as events within the family or external to the family which occurred prior to testing may have had unknown effects. However, since all families had an equal chance of being subject to these imponderable variables, the potential effects were randomized. Threats to internal validity arising from history, maturation, testing, instrumentation, regression, and mortality were controlled since all families were tested only once with the same procedure. Reactive effects of testing were controlled inasmuch as all families underwent the same procedure. Demand characteristics arising from experimenter bias were controlled since the family completed the FLQ at the time of testing and the experimenter therefore had no knowledge of which group the family would fall into.

Data and Instrumentation

As already noted, after a family had returned the mailed questionnaire or had been referred by a therapist, they were contacted by the experimenter and requested to come in for the experiment. The meeting took place in the Counseling Lab of the Psychology Department at a time convenient for the family members.

When the family arrived, they were taken to a room and any questions they had about the experimental procedure were answered. They were told that the purpose of the experiment involved looking at how families make decisions together. Questions pertaining to specific hypotheses were deferred, with the family's permission, until the completion of the experiment. All families cooperated with this.

Each family member was then asked to independently complete a Revealed Differences questionnaire (see Appendix E). The questionnaire was adapted from Mishler and Waxler (1968) and the items presented fictional situations of families in conflict about a variety of issues. The issues represented areas in which the families in the experiment may, or may not, have been experiencing dissension among the family members. These questionnaires were scored by

the experimenter while the family members independently completed the FLQ. The experimenter was present with the family during this phase of the procedure to insure that the family members completed the instruments independently.

At present, there are no well established test instruments which differentiate normal from abnormal or "satisfied" from "dissatisfied" families. The Family Life Questionnaire (FLQ) used in the present study (see Appendix F) was developed by Guerney (1977) for use as a pre- and post-therapy measure but was instead used as a research instrument. The FLQ is a self-report instrument which provides a measure of satisfaction and harmony in family life. Guerney (1977) reported that unpublished doctoral dissertations indicated that the FLQ had a test-retest reliability ranging from .61 to .84. A factor analysis indicated that the first factor was the total score and all but one item had a factor loading above .2 on the first factor. In terms of validity, Guerney (1977) cited several unpublished doctoral dissertations which demonstrated construct and concurrent validity. The FLQ correlated significantly with observed behavior and with tests of marital adjustment, marital communication, parent-adolescent communication, and various semantic differential tests. Parenthetically, the families in the present study who had been re-

ferred by therapists fell into the dissatisfied group on the basis of their FLQ scores.

After family members completed the FLQ, they were taken to another room in which there was recording equipment. Each family member was given a separate microphone in order to avoid, as much as possible, the loss of material stemming from more than one person talking at once. The microphones were attached to a mixer so that the conversation was fed into a single tape.

After the recording set-up was explained and individual microphones in place, the family was given the following instructions:

Now I'm going to ask you to discuss some of the situations that you read about on the first questionnaire. As you might have expected there were some situations on which you were all in agreement, and some on which you had different opinions. Sometimes mother and father might disagree, sometimes mother and (child's name) might disagree, and sometimes father and (child's name) might disagree. I've picked out some of the items on which there was a disagreement and now I'll give each of you a chance to defend your own point of view and to explain why you selected the answer you did. You can take about 10 minutes to talk it over and see if, during this time, you can reach a family decision, that is, come to an agreement on the answer that best represents the thinking of the whole family.

When you've reached an agreement, someone can signal me through the one-way mirror by holding up his hand. Then I'll come back into the room and give you another one to talk about. This is the first one.

Following this, the experimenter read the first Revealed Differences item, indicated how each family member had responded, and left the room. The experimenter returned upon a signal from the family, presented another item along with an indication of how each member of the triad had responded, and again left the room.

Items were presented, to the extent possible, so that no family member had to consistently defend his/her response against the other two family members. Therefore, the first item was one on which the child had responded differently than the parents, the second item one on which the mother had responded differently than the father and child, the third item one on which the father had responded differently than the mother and child, and so on. This was standard for each family to the extent possible as permitted by their responses. In two or three cases the "defense" alternated between two family members during the latter portion of the session.

After 25 to 30 minutes of discussion, during which time a family had typically discussed six or more items, the interaction was discontinued. Before the family left, the experimenter debriefed them and answered any questions they might have had. The entire procedure generally took about one hour.

Beginning with the sixth minute of discussion, the interactions were transcribed verbatim, with the exception of names, which were deleted. The transcript for each family consisted of 150 consecutive Surface Structures. Surface Structures were defined as complete statements, almost always grammatical sentences. Pause fillers such as "you know" were not included as part of a Surface Structure. The speaker was identified as "mother," etc.

Two trained, blind scorers were utilized to score the transcripts for 11 subcategories which comprised the major categories of Semantic Ill-Formedness, Distortion, Deletion, and Generalization.² (See Appendix G for the scorers' instructions.) The scorers attained interrater reliability coefficients of .97 to .93 on the the pilot

²The categories of Semantic Ill-Formedness, Distortion, Deletion, and Generalization, along with their subcategories were presented in Chapter II. Incompletely specified verbs, a subcategory of Generalization, were not included in the study because all verbs, to some extent, are incompletely specified. Similarly, Bandler and Grinder (1975) listed 29 "syntactic environments" in which presuppositions, a subcategory of Distortion, may occur. While useful for therapists, these subcategories were considered to be too broad to operationally define in a specific, concrete fashion.

transcripts and thereafter each scorer scored half of the transcripts. Each scorer also independently scored two transcripts of the same families in order that a second interrater reliability coefficient could be computed for the main study.

FLQ scores for each family triad were computed by summing the individual scores of each family member. A mean FLQ score was computed for the families in the study. As noted, families falling one half standard deviation or more below the mean comprised the dissatisfied group and those falling one half standard deviation or more above the mean comprised the satisfied group. Families within one half standard deviation of the mean were excluded from the study. It is planned that the data from all families will be used for further research.

Analysis

In order to determine if dissatisfied family triads had a greater occurrence of Semantic Ill-Formedness, Distortion, Deletion, and Generalization in the linguistic Surface Structure than did satisfied family triads (Hypothesis 1), a t test was computed on the mean of each group.

A significance level of .05, one-tailed, was employed. This was based on total scores for the four major categories.

In order to determine if fathers in dissatisfied family triads used Semantic Ill-Formedness, Distortion, Deletion, and Generalization with significantly greater frequency than did fathers in satisfied family triads (Hypothesis 2), a t test was computed on the mean proportion of dysfunctional language structures to total number of Surface Structures of fathers in each group. A significance level of .05, one-tailed, was employed. Similarly, a t test was computed to test Hypotheses 3 and 4. This was based on the total scores for the four categories.

A 2x3 analysis of variance was computed in order to determine: (1) if dissatisfied family triads differed from satisfied family triads in the consistency with which Semantic Ill-Formedness was used in the linguistic Surface Structure when three sets of 50 consecutive Surface Structures were examined (Hypothesis 5) and (2) if dissatisfied family triads differed from satisfied family triads in the extent to which Semantic Ill-Formedness was used in the linguistic Surface Structure (Hypothesis 9). A significance level of .05 was employed. Similarly, a 2x3 analy-

sis of variance was computed for each of the other three main categories to test Hypotheses 6 and 10, 7 and 11, and 8 and 12.

Pilot Study

The purposes of the pilot study were: (1) to determine that enough scorable data would occur in 50 Surface Structures (approximately 5-7 minutes of taped conversation); (2) to demonstrate that sets of 50 consecutive Surface Structures would not differ significantly in terms of the total score; (3) to compare scores of a satisfied and dissatisfied family triad in order to estimate the sample size necessary to obtain significant differences between the two groups; and (4) to demonstrate interrater reliability.

Two hundred and twenty Surface Structures (approximately 25 minutes of conversation) were scored for each of two family triads. The initial 55 Surface Structures (approximately five minutes of conversation) in each family were excluded from further analysis since the first five minutes were to be excluded in the main study. Thus, for each family, three sets of 55 Surface Structures per set were analyzed.

Family A, with a FLQ score of 200, fell into the dissatisfied group and Family B, with a FLQ score of 248, fell into the satisfied group.

The results of the pilot study were:

1. For each set of 55 Surface Structures, Family A had 102, 104, and 100 scored items respectively. For each set of 55 Surface Structures Family B had 69, 87, and 92 scored items respectively. Thus, the occurrence of scored items was sufficient to justify the use of sets of 50 Surface Structures in the main study.
2. The total score for each set of 55 Surface Structures for Family A were compared by a one-way analysis of variance. The difference was not significant ($F=.027$). The total score for each set of 55 Surface Structures for Family B were similarly compared and again, the difference was not significant ($F=1.51$). This finding is consistent with the assumption that stable patterns of interaction can be identified in short segments of family interaction.
3. A mean was computed for the scores on the three sets of Surface Structures for each family. Family A obtained a mean occurrence of 102 scorable items per 55 Surface Structures and Family B a mean occurrence of 82.7 scorable items per 55 Surface Structures. These means were compared

by a t test and the difference was significant ($t=2.73$, $p<.05$, one-tailed). Based on this finding, it was concluded that the planned sample size of 30 families was sufficient for the main study.

4. Interrater reliability coefficients were computed for the scores on each family by a Pearson product-moment correlation. For Family A, $r=.98$ and for Family B, $r=.97$. It was concluded that reliability was sufficient to justify use of one rater per transcript.

5. The pilot results suggested that for consecutive sets of 55 Surface Structures, the main categories of Semantic Ill-Formedness, Distortion, Deletion, and Generalization may be inconsistent. In other words, the number of items scored may vary significantly from one set of Surface Structures to another. This demonstrated the need to score long segments of interaction rather than shorter segments which were originally planned.

CHAPTER V

RESULTS

The mean FLQ score of families participating in the study was 219.9 with a standard deviation of 22.35. Therefore, six families with FLQ scores below 208 (one half standard deviation below the mean) comprised the "dissatisfied" group and six families with FLQ scores above 231 (one half standard deviation above the mean) comprised the "satisfied" group.

An interrater reliability coefficient was computed for each of two families in the main study. The scorers obtained reliability coefficients of .86 and .94. Although not of the magnitude of the coefficients obtained in the pilot study (.97 and .93), the present coefficients were highly significant ($t(148) = 20.5$, $p < .001$ and $t(148) = 32.6$, $p < .001$, respectively) and were sufficient to justify the use of one rater per transcript.

A t test was computed to determine if the types of families differed in the extent to which dysfunctional linguistic structures were used. The difference was in the predicted direction but did not attain significance at the

.05 level ($t(10) = 1.719$, $p < .10$, one tail). This finding is summarized in Table 2.

Table 2

Mean Number of Dysfunctional Language Structures
for Dissatisfied and Satisfied Family
Triads and Individual Members

Group	Dissatisfied	Satisfied	$t(10)$
Families	241.33 ^a	205.166	1.719
Fathers	1.582 ^b	1.504	.35
Mothers	1.577	1.265	2.066*
Children	1.609	1.298	1.955*

Note. $n = 6$ for each group

^aMean number of dysfunctional linguistic structures per 150 Surface Structures

^bMean number of dysfunctional linguistic structures per Surface Structure

* $p < .05$, one tail

The total number of dysfunctional language structures scored for each individual family member was divided by the number of Surface Structures that family member had contributed to obtain a ratio of the average number of dysfunctional language structures each family member used per Surface Structure. The difference between the means of the fathers in the two groups was not significant. Both

mothers and children in dissatisfied family triads obtained significantly higher means than mothers and children in satisfied family triads. These results are summarized in Table 2.

A 2x3 analysis of variance (family type x sets of 50 consecutive Surface Structures) was computed for each of the four main categories of dysfunctional linguistic structures to determine if the families differed in the extent to which each language structure was used. The interaction effects for each of the four categories were used to determine if the families differed in the consistency with which the category occurred across three sets of 50 consecutive Surface Structures. The findings, were, for the most part, non-significant. The results of the analyses have been summarized in Table 3.

A significant interaction effect was obtained for the category of Distortion, $F(2, 30) = 3.691$, $p < .05$. However, the Scheffe method of multiple comparisons yielded no significant difference between the largest and smallest means, $F(5, 30) = 1.561$. It was concluded that the inconsistency in the use of Distortion was not significant.

In terms of the category of Deletion, a significant main effect for families was obtained, $F(1, 30) = 12.459$, $p < .01$. It was concluded that the dissatisfied families

Table 3
Analysis of Variance for the Four Main
Categories of Dysfunctional
Linguistic Structures

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Semantic Ill-Formedness			
Family Type (A)	1	13.428	.554
Set of 50 Surface Structures (B)	2	2.197	.09
A x B	2	2.49	.102
Error	30	24.23	
Distortion			
A	1	14.675	1.189
B	2	11.081	.898
A x B	2	45.545	3.691*
Error	30	12.338	
Deletion			
A	1	702.197	12.459**
B	2	111.58	1.97
A x B	2	3.249	.057
Error	30	56.36	
Generalization			
A	1	4.703	.073
B	2	10.106	.158
A x B	2	11.631	.182
Error	30	63.749	

* $p < .05$

** $p < .01$

used Deletion to a significantly greater extent than the satisfied families.

A post hoc analysis of the subcategories revealed that the dissatisfied family triads had a higher mean occurrence of all of the subcategories except Superlatives. However, only the difference in the use of Verb Phrases attained significance. The satisfied families had a greater mean number of Surface Structures in which no dysfunctional linguistic structure occurred than did the dissatisfied family triads but the difference did not attain significance, $t(10) = 1.929$, $p < .10$. The post hoc findings for the subcategories are summarized in Table 4.

It was reported above that mothers and children in dissatisfied family triads obtained a higher mean occurrence of dysfunctional language structures than did the mothers and children in satisfied family triads. In light of this finding, it was necessary to determine if differences existed in the number of Surface Structures contributed by corresponding family members in dissatisfied and satisfied family triads. As Table 5 illustrates, no significant differences were found.

Finally, in terms of the test instruments, satisfied and dissatisfied families did not differ in the number of

Table 4

Mean Scores for Dissatisfied and Satisfied Family
Triads for Subcategories of Dysfunctional
Linguistic Structures

Subcategories	Dissatisfied	Satisfied	$t(10)$
Mind Reading	9.5	6.666	.783
But	12.333	11.833	.111
Cause & Effect	1.33	.666	.799
Verb Phrase	69.0	49.166	2.229*
Adjectival Verb	.5	.166	.881
Comparative	4.0	3.666	.132
Superlatives	.166	1.833	1.45
Clearly/Obviously	1.0	.5	1.168
Modal Operator	40.833	33.666	1.294
Surface Structures Without Scored Item	33.333	38.333	1.929

Note. $n = 6$ for each group.

* $p < .05$

Table 5

Mean Number of Surface Structures Contributed
by Members of Satisfied and
Dissatisfied Families

Family Member	Dissatisfied	Satisfied	$t(10)$
Father	55.0	66.833	1.023
Mother	60.332	47.166	1.332
Child	34.666	36.0	.112

Note. $n = 6$ for each group.

disagreements on the Revealed Differences questionnaire. Dissatisfied families had a mean number of 12.83 disagreements as compared to a mean of 11.17 for satisfied families with $t(10) = 1.44$. The dissatisfied families had a greater discrepancy between the scores of individual family members on the FLQ than did the satisfied families. The dissatisfied families had a mean discrepancy of 15.17 points between the highest and lowest family member while the satisfied families had a mean discrepancy of 9.83 points. This difference was significant, $t(10) = 2.3$, $p < .05$. In all families the child typically had the lowest FLQ score.

CHAPTER VI

DISCUSSION AND SUMMARY

Strictly interpreted, the results lead to the conclusion that when talking together, members of dissatisfied family triads utilized Surface Structures which contained Deletions to a greater extent than did members of satisfied family triads. More specifically, the members of dissatisfied family triads communicated with Surface Structures in which the noun arguments, or the objects of process words, were deleted. If, as Bandler and Grinder (1975) argued, Deletion is a process which impoverishes the speaker's model of the world and the listener's understanding of that model, the findings indicate that the dissatisfied family triads talk in a manner which limits the behavioral options of both the speaker and the listener(s). This finding is consistent with the theoretical approach to family interaction posited in Chapter II insofar as it was theorized that families in which a member is symptomatic limit the range of behaviors available to family members. This finding is also in keeping with expectations based on family interaction research findings

which suggest that clinical families have a narrower range of behavior (Haley, 1964, 1967a, 1967b; Ferreira & Winter, 1965, 1968, for example). More importantly, this finding represents one way in which the family maintains limits on the behavioral alternatives of family members.

The finding that mothers and children in dissatisfied family triads utilized a greater ratio of dysfunctional linguistic structures per Surface Structure than mothers and children in satisfied family triads is also consistent with the theoretical assumptions presented in Chapter II inasmuch as it demonstrates that the communicational patterns in the family are not a function of one family member. The failure to find a significant difference between the fathers in the two groups stemmed from the fact that the fathers in the satisfied families had a higher ratio than did the mothers and children in satisfied families. The dissatisfied fathers had a ratio which was similar to their wives and children and therefore contributed equally to the greater amount of Deletion found in the verbal communication of dissatisfied families.

The finding that dissatisfied families as a group did not differ from satisfied families as a group in the consistency with which the main categories occurred across

three sets of 50 consecutive Surface Structures is consistent with the assumption that valid representations of family interaction can be found in relatively short sequences of interaction. However, in terms of the behavior observed in the present study, this assumption is valid only for the families as a group. Individual families varied widely in the consistency of occurrence in each of the four categories. Thus, if one wished to examine individual families, longer sequences of interaction would be more appropriate.

The finding that dissatisfied families had a greater discrepancy on the FLQ between the highest and lowest scores within the family than did the satisfied families can be interpreted in terms of "spontaneous agreement" (Winter & Ferreira, 1970). It has been found that asymptomatic families agree on more issues before any discussion takes place than do families in which a member is symptomatic. One of the implications of this is that the dissatisfied families are more unaware of the perceptions of the family which are held by other family members. The most extreme form of this would be the imperviousness described in families of schizophrenics by Laing and his colleagues (Laing, 1961, 1965; Laing & Esterson, 1964; Laing et al., 1966).

Interpreted more broadly, the overall results neither support nor refute, in an unequivocal manner, the hypotheses which were advanced. Although the hypothesis that dissatisfied families would use dysfunctional language structures to a greater extent than satisfied families was not confirmed, the results were in the predicted direction and narrowly missed attaining statistical significance. Similarly, while only the category of Deletion and the subcategory of Verb Phrases significantly differentiated the groups, the dissatisfied families had a higher mean occurrence of each of the main categories and of each of the subcategories except Superlatives. This greater occurrence may enhance the impoverishing effects of the Deletions. Likewise, the dissatisfied families had a lower mean occurrence, although not significant, of Surface Structures without a dysfunctional language structure. Therefore, the dissatisfied families had fewer Surface Structures which might clarify their communication, again emphasizing the effects of the Deletions.

Three factors, either individually or in combination, may account for the failure to obtain statistically significant differences between the groups in most of the categories and subcategories. First, Bandler and Grinder (1975)

noted that the modeling processes of Distortion, Deletion, and Generalization are not necessarily dysfunctional but in fact are, depending upon the context, essential to human growth and creativity. Therefore, the differentiation of the groups may not be based solely upon the occurrence of the language structures but also upon the particular context in which the language structures occur. In other words, it was possibly less essential that clear communication take place in the present experimental context than in another context in which a family decision is more crucial.

Secondly, in terms of the occurrence of dysfunctional language structures, the scores of the satisfied families showed more variation than the scores of the dissatisfied families. In other words, an individual satisfied family may have a score well above the mean of satisfied families for a particular category while the score for other categories may be well below the mean of satisfied families. In contrast, the dissatisfied families tended to have less variability around their means across the categories. It is therefore possible that a given satisfied family could be characterized by all family members using, preponderantly, only one or two types of dysfunctional language

structures while the dissatisfied families tend to use all of the types more evenly.

Lastly, the dissatisfied family group in the present study may differ from a group of clinical families. Four of the families, to the extent known, had not been referred for therapy and were, aside from their lower FLQ scores, asymptomatic. In regard to the FLQ, it is possible that they were simply less defensive than the satisfied families. The two clinical families in the dissatisfied group were currently in treatment and presumably in the process of altering their communicational patterns. One indication of the possible difference between the dissatisfied families in the present study and a group of clinical families is the fact that they did not differ from the satisfied families in the number of disagreements on the Revealed Differences questionnaire. Clinical families have been found to differ from non-clinical families in this respect (Ferreira & Winter, 1965; Winter & Ferreira, 1970, for example).

In terms of further research, the first recommendation would be to repeat this study with a group of clinical or symptomatic families before they began treatment. The significant and nearly significant results obtained in the

present study warrant such a replication. In this context, it would also be worthwhile to attempt to differentiate the language structures used by clinical families as a function of the presenting symptomatic behavior of the family. A pre- and post-therapy measure of language use would be indicated to determine if language structure changes as a function of therapy.

Secondly, within ethical limits and with the informed consent of families, the study should be repeated with the context being varied. In other words, it could be determined if the language structures used in a relatively benign context, such as in the present study, increase or decrease in frequency when the interaction occurs in a more personal, threatening, or anxiety arousing context. It is possible that in an anxiety arousing context, clinical families increase their use of dysfunctional language structures while asymptomatic families clarify their language.

In a somewhat different context, Bandler and Grinder (Grinder & Bandler, 1976; Bandler et al., 1976) have indicated that symptomatic families are characterized by the individual family members using different language styles such that it becomes difficult for them to understand each

other's experience. It is possible in symptomatic families that the individual members use different forms of the language structures investigated in the present study while asymptomatic family members use similar forms. In other words, in symptomatic families, one member may use a disproportionate amount of Distortion while another member may use a similarly disproportionate amount of Semantic Ill-Formedness. Asymptomatic families may, on the other hand, be characterized by all members using a disproportionate amount of a particular category of dysfunctional language structure.

Finally, in order to determine how language functions to maintain homeostatic mechanisms in the family, it is necessary to look for repetitive patterns or redundancies in the language as the family interacts (Bateson, 1960, for example). This question involves the determination of whether or not a particular language structure is followed, to a greater than chance extent, by another family member contributing another particular language structure. This would address the question of how families go about preventing change on the part of individual members.

In summary, the results of this study indicate that families which obtain lower FLQ scores are characterized

by a greater occurrence of Deletion, and particularly the subcategory of Verb Phrases, in their linguistic Surface Structures. All members of the family contributed to this greater use of Deletion. Although the differences were not significant, it is probable that the impoverishing effects of Deletion are enhanced by a greater occurrence of the other potentially dysfunctional linguistic structures which were studied.

Bandler and Grinder (Bandler & Grinder, 1975; Grinder & Bandler, 1976; Bandler et al., 1976) indicated that the linguistic process of Deletion impoverishes the speaker's model of the world and reduces the behavioral alternatives available. The effect is equally impoverishing to the listener(s) who must determine what the speaker's model of the world is and must somehow respond in an appropriate fashion. The listeners' alternatives, in terms of response, are limited to the impoverished communication which was received.

In terms of family interaction, the consistent use of Deletion by all family members impoverishes the model of the world and the behavioral alternatives available to the family. This would result in change being quite difficult to achieve since the individual family members and the fam-

ily as a group are operating on the basis of limited choices. Furthermore, these limitations are perpetuated by the Deletions such that the homeostatic balance is maintained.

Bandler and Grinder (Bandler & Grinder, 1975; Grinder & Bandler, 1976; Bandler et al., 1976) have presented a variety of ways in which therapists can challenge Deletions and enable individuals and/or families to expand their behavioral alternatives. In light of the present findings, therapists would do well to attend to impoverishing language structures as well as to language structures which may enhance the effects of the Deletions.

While the present findings do not establish an etiologic link between family dissatisfaction and Deletion or any other dysfunctional linguistic structure, the findings do establish that linguistic structures containing Deletions are part of the current verbal communication in families whose members are more dissatisfied with their family life. Further research is needed to determine more specifically how language use may (or perhaps may not) perpetuate dissatisfaction or symptomatic behavior in families.

REFERENCES

- Bandler, R., & Grinder, J. The structure of magic (Vol. 1). Palo Alto, California: Science & Behavior Books, 1975.
- Bandler, R., Grinder, J., & Satir, V. Changing with families. Palo Alto, California: Science & Behavior Books, 1976.
- Bateson, G. Minimal requirements for a theory of schizophrenia. Archives of General Psychiatry, 1960, 2, 477-491.
- Bateson, G. Response of the theorists to E. G. Mishler and N. E. Waxler 'Family interaction and schizophrenia: A review of current theories.' In E. G. Mishler & N. E. Waxler (Eds.), Family process and schizophrenia. New York: Science House, 1968.
- Bauman, G. & Roman, M. Interaction testing in the study of marital dominance. Family Process, 1966, 5, 230-242.
- Beavers, W. R., Blumberg, S., Timken, K. R., & Weiner, M. F. Communication patterns of mothers of schizophrenics. Family Process, 1965, 4, 95-103.
- Becker, J., & Siefkes, H. Parental dominance, conflict, and disciplinary coerciveness in families of female schizophrenics. Journal of Abnormal Psychology, 1969, 74, 193-198.
- Bertalanffy, Ludwig von. General systems theory. New York: George Braziller, Inc., 1968.
- Bever, T. G. The cognitive basis for linguistic structures. In J. Hayes (Ed.), Cognition and the development of language. New York: John Wiley & Sons, Inc., 1970.

- Block, J., Patterson, V., Block, J., & Jackson, D. D. A study of the parents of schizophrenic and neurotic children. Psychiatry, 1958, 21, 387-397.
- Bodin, A. Family interaction: A social-clinical study of synthetic, normal, and problem family triads. In W. D. Winter & A. J. Ferreira (Eds.), Research in family interaction. Palo Alto, California: Science & Behavior Books, 1969.
- Caputo, D. V. The parents of the schizophrenic. Family Process, 1963, 2, 339-356.
- Carroll, J. B. Language and thought. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.
- Cheek, F. E. The father of the schizophrenic: The function of a peripheral role. Archives of General Psychiatry, 1965, 13, 336-345.
- Cheek, F. E., & Anthony, R. Personal pronoun usage in families of schizophrenics and social space utilization. Family Process, 1970, 9, 431-449.
- Chomsky, N. Syntactic structures. The Hague, The Netherlands: Mouton & Co., 1957.
- Chomsky, N. Aspects of the theory of syntax. Cambridge, Massachusetts: MIT Press, 1965.
- Cicchetti, D. The reactions of schizophrenics and normals to parental dialogues. Journal of Abnormal Psychology, 1967, 72, 282-289.
- Cicchetti, D., Klein, E. B., Fontana, A. F., & Spohn, H. E. A test of the censure-deficit model in schizophrenia employing the Rodnick-Garmezy visual-discrimination task. Journal of Abnormal Psychology, 1967, 72, 326-334.
- Cicchetti, D., & Ornsten, P. S. The reactions of mental patients to a disturbed family in psychotherapy. Journal of Abnormal Psychology, 1968, 73, 156-161.

- Cooper, D. Psychiatry and anti-psychiatry. New York: Ballentine Books, 1967.
- Cromwell, R. E., Olson, D. H. L., & Fournier, D. G. Tools and techniques for diagnosis and evaluation in marital and family therapy. Family Process, 1976, 15, 1-49.
- Deese, J. Psycholinguistics. Boston: Allyn & Bacon, 1970.
- Farina, A. Patterns of role dominance and conflict in parents of schizophrenic patients. Journal of Abnormal and Social Psychology, 1960, 61, 31-38.
- Farina, A., & Dunham, R. M. Measurement of family relationships and their effects. Archives of General Psychiatry, 1963, 9, 64-73.
- Ferreira, A. J., & Winter, W. D. Family interaction and decision-making. Archives of General Psychiatry, 1965, 13, 214-223.
- Ferreira, A. J., & Winter, W. D. Information exchange and silence in normal and abnormal families. Family Process, 1968, 7, 251-276.
- Ferreira, A. J., Winter, W. D., & Poindexter, E. J. Some interactional variables in normal and abnormal families. Family Process, 1966, 5, 60-75.
- Framo, J. L. Systematic research of family dynamics. In I. Boszormenyi-Nagy & J. L. Framo (Eds.), Intensive family therapy. New York: Hoeber Medical Division/Harper & Row, 1965.
- Framo, J. L. (Ed.). Family interaction: A dialogue between family researchers and family therapists. New York: Springer Publishing Co., 1972.
- Freeman, H. E., Simmons, O. G., & Bergan, B. J. Possessiveness as a characteristic of mothers of schizophrenics. Journal of Abnormal and Social Psychology, 1959, 58-59, 271-273.
- Friedman, C. J., & Friedman, A. S. Characteristics of schizogenic families during a joint story-telling task. Family Process, 1970, 9, 333-354.

- Garnezy, N., Clarke, A. R., & Strickner, C. Child rearing attitudes of mothers and fathers as reported by schizophrenic and normal patients. Journal of Abnormal and Social Psychology, 1961, 63, 176-182.
- Garnezy, N., Farina, A., & Rodnick, E. H. The structured situational test: A method for studying family interaction in schizophrenia. American Journal of Orthopsychiatry, 1960, 30, 445-451.
- Gartner, R. B., Fulmer, R. H., Weinshel, M., & Goldklank, S. The family life cycle: Developmental crises and their structural impact on families in a community mental health center. Family Process, 1978, 17, 47-59.
- Greenberg, G. S. The family interactional perspective: A study and examination of the work of Don D. Jackson. Family Process, 1977, 16, 385-413.
- Grinder, J. T. On deletion phenomena in English. The Hague, The Netherlands: Mouton & Co., 1974.
- Grinder, J. T., & Bandler, R. The structure of magic (Vol. 2). Palo Alto, California: Science & Behavior Books, 1976.
- Grinder, J. T., & Elgin, S. H. Guide to transformational grammar. New York: Holt, Rinehart, & Winston, Inc., 1973.
- Guerney, B. G., Jr. Relationship enhancement. San Francisco: Jossey-Bass, Inc., 1977.
- Haley, J. The family of the schizophrenic: A model system. Journal of Mental and Nervous Disease, 1959, 129, 357-374.
- Haley, J. Observation of the family of the schizophrenic. American Journal of Orthopsychiatry, 1960, 30, 460-467.
- Haley, J. Family experiments: A new type of experimentation. Family Process, 1962, 1, 265-293.
- Haley, J. Strategies of psychotherapy. New York: Grune & Stratton, 1963.

- Haley, J. Research on family patterns: An instrument measure. Family Process, 1964, 3, 41-65.
- Haley, J. Speech sequences of normal and abnormal families with two children present. Family Process, 1967a, 6, 81-97.
- Haley, J. Experiment with abnormal families: Testing done in a restricted communicational setting. Archives of General Psychiatry, 1967b, 17, 53-63.
- Haley, J. Critical overview of the present status of family interaction research. In J. L. Framo (Ed.), Family interaction: A dialogue between family researchers and family therapists. New York: Springer Publishing Co., 1972.
- Hall, A. D., & Fagen, R. E. Definition of system. General Systems Yearbook, 1956, 1, 18-28.
- Handel, G. Psychological study of whole families. Psychological Bulletin, 1965, 63, 19-41.
- Handel, G. Analysis of correlative meaning: The TAT in the study of whole families. In G. Handel (Ed.), The psychosocial interior of the family. Chicago: Aldine Publishing Co., 1967.
- Hassan, S. A. Transactual and contextual invalidation between the parents of disturbed families: A comparative study. Family Process, 1974, 13, 53-75.
- Hutchinson, J. G. Family interaction patterns and the emotionally disturbed child. In W. D. Winter & A. J. Ferreira (Eds.), Research in family interaction. Palo Alto, California: Science & Behavior Books, 1969.
- Jackson, D. D. The question of family homeostasis. The Psychiatric Quarterly Supplement, 1957, 31(Pt. 1), 79-90.
- Jackson, D. D. Schizophrenic symptoms and family interaction. Archives of General Psychiatry, 1959, 1, 618-621.

- Jackson, D. D. The study of the family. Family Process, 1965a, 4, 1-19.
- Jackson, D. D. Family rules: The marital quid pro quo. Archives of General Psychiatry, 1965b, 12, 589-594.
- Jackson, D. D. The individual and the larger contexts. Family Process, 1967, 6, 139-147.
- Jackson, D. D., Block, J., Block, J., & Patterson, V. Conceptions of the schizophrenogenic parent. Archives of Neurology and Psychiatry, 1958, 79, 448-459.
- Jackson, D. D., Riskin, J., & Satir, V. A method of analysis of a family interview. Archives of General Psychiatry, 1961, 5, 321-339.
- Jacob, T. Family interaction in disturbed and normal families: A methodological and substantive review. Psychological Bulletin, 1975, 82, 33-66.
- Jacob, T., & Davis, J. Family interaction as a function of experimental task. Family Process, 1973, 12, 415-429.
- Korzybski, A. Science and sanity (3rd ed.). Lancaster, Pennsylvania: Business Press, Inc., 1948.
- Laing, R. D. The self and others: Further studies in sanity and madness. London: Tavistock Publications, 1961.
- Laing, R. D. Mystification, confusion, and conflict. In I. Borzormenyi-Nagy & J. L. Framo (Eds.), Intensive family therapy. New York: Hoeber Medical Division/Harper & Row, 1965.
- Laing, R. D., & Esterson, A. Sanity, madness, and the family. Baltimore, Maryland: Penguin Books, 1964.
- Laing, R. D., Phillipson, H., & Lee, A. R. Interpersonal perception. New York: Harper & Row, 1966.
- Lederer, W., & Jackson, D. D. The mirages of marriage. New York: W. W. Norton & Co., 1968.

- Lerner, P. M. Resolution of intrafamilial role conflict in families of schizophrenic patients. The Journal of Nervous and Mental Disease, 1965, 14, 342-352.
- Levinger, G. Supplementary methods in family research. Family Process, 1963, 2, 357-366.
- Levy, J., & Epstein, N. B. An application of the Rorschach test in family interaction. Family Process, 1964, 3, 344-376.
- Lidz, T., Cornelison, A., Fleck, S., & Terry, D. The intrafamilial environment of schizophrenic patients: II. Marital schism and marital skew. American Journal of Psychiatry, 1957, 114, 241-249.
- Lu, Y. Contradictory parental expectations in schizophrenia. Archives of General Psychiatry, 1962, 6, 219-237.
- Mishler, E. G. Families and schizophrenia: An experimental study. Mental Hygiene, 1966, 50, 552-556.
- Mishler, E. G., & Waxler, N. E. Interaction in families: An experimental study of family processes and schizophrenia. New York: John Wiley & Sons, Inc., 1968.
- Murrell, S. A., & Stachowiak, J. G. Consistency, rigidity, and power in the interaction of clinic and non-clinic families. Journal of Abnormal Psychology, 1967, 72, 265-272.
- Rabkin, L. Y. The patient's family: Research methods. Family Process, 1965, 4, 105-127.
- Riskin, J. Methodology for studying family interaction. Archives of General Psychiatry, 1963, 8, 343-348.
- Riskin, J. Family interaction scales. Archives of General Psychiatry, 1964, 11, 484-494.
- Riskin, J., & Faunce, E. E. An evaluative review of family interaction research. Family Process, 1972, 11, 365-455.

- Ritterman, M. K. Paradigmatic classification of family therapy theories. Family Process, 1977, 16, 29-48.
- Rodnick, E. H. Cognitive and perceptual response set in schizophrenia. In R. Jessor & Feshbach (Eds.), Cognition, personality, and clinical psychology. San Francisco: Jossey-Bass Inc., 1967.
- Ruesch, J., & Bateson, G. Communication: The social matrix of psychiatry. New York: W. W. Norton & Co., 1951.
- Singer, M. T., & Wynne, L. D. Thought disorder and family relations of schizophrenics. Archives of General Psychiatry, 1965, 12, 569-586.
- Singer, S. S. Family interaction with schizophrenics and their siblings. Journal of Abnormal Psychology, 1966, 71, 345-353.
- Sohler, D. T., Hilsberg, J. D., Fleck, S., Cornelison, A. R., Kay, E., & Lidz, T. The prediction of family interaction from a battery of projective tests. Journal of Projective Techniques, 1957, 21, 199-208.
- Sojit, C. M. Dyadic interaction in a double bind situation. Family Process, 1969, 8, 235-261.
- Sojit, C. M. The double bind hypothesis and the parents of schizophrenics. Family Process, 1971, 10, 53-75.
- Stabenau, J. R., Turpin, J., Werner, M., & Pollin, W. A comparative study of families of schizophrenics, delinquents, and normals. Psychiatry, 1965, 28, 45-59.
- Strodtbeck, F. L. Husband-wife interaction over revealed differences. American Sociological Review, 1951, 16, 468-473.
- Strodtbeck, F. L. The family as a three-person group. American Sociological Review, 1954, 19, 23-29.

- Strodtbeck, F. L. Technique for stimulating family interaction in the laboratory and methodological problems of conducting experiments with families. In J. L. Framo (Ed.), Family interaction: A dialogue between family researchers and family therapists. New York: Springer Publishing Co., 1972.
- Troemel-Ploetz, S. 'She is just not an open person.' A linguistic analysis of a restructuring intervention in family therapy. Family Process, 1977, 16, 339-353.
- Vetter, H. J. Language behavior and psychopathology. Chicago: Rand McNally & Co., 1969.
- Watzlawick, P. A structured family interview. Family Process, 1966, 5, 256-271.
- Watzlawick, P. How real is real? New York: Random House, 1976.
- Watzlawick, P., & Beavin, J. Some formal aspects of communication. American Behavioral Scientist, 1967, 10, 4-8.
- Watzlawick, P., Beavin, J., & Jackson, D. D. Pragmatics of human communication. New York: W. W. Norton & Co., 1967.
- Watzlawick, P., Beavin, J., Sikorski, L., & Mecia, B. Protection and scapegoating in pathological families. Family Process, 1970, 9, 27-39.
- Watzlawick, P., & Weakland, J. H. (Eds.). The interactional view. New York: W. W. Norton & Co., 1977.
- Watzlawick, P., Weakland, J. H., & Fisch, R. Change: Principles of problem formation and problem resolution. New York: W. W. Norton & Co., 1974.
- Winter, W. D., & Ferreira, A. J. Interaction process analysis of family decision-making. Family Process, 1967, 6, 155-172.
- Winter, W. D., & Ferreira, A. J. A factor analysis of family interaction measures. Journal of Projective Techniques and Personality Assessment, 1970, 34, 55-63.

APPENDIXES

Appendix ALetter to Logan High School Families

Dear Mr. and Mrs.

As you know, the American family has become the object of widespread study. There is growing interest among students of family life in the different ideas and opinions of families about issues that come up in their daily lives. In order to gain more understanding about how families reach decisions about these different issues we are asking a large number of families to participate in a special project.

We are writing to ask you for your cooperation. Your family's name was randomly selected from the Logan High School Student Directory. The project requires families to complete the enclosed questionnaire and return it to us in the stamped envelope. You have probably noticed that the questionnaire has a code number. The undersigned are the only persons who have access to the code and all information will be strictly confidential.

Based on the information we receive from the returned questionnaires, we plan to ask families consisting of father, mother, and high school age child to come to our office together so they have a chance to tell us their ideas and talk them over. These meetings take an hour to an hour and a half and are scheduled at a time convenient for the family, including evenings and Saturdays. In these meetings, family members complete a brief questionnaire and discuss together some fictional situations which are unrelated to any individual family. The discussions are tape recorded and anonymous transcriptions made. In order to show a true picture of the many different points of view in different families, it is very important that all selected families participate in the project.

The project has been approved by faculty members of the Department of Psychology at Utah State University. As is the case with all scientific projects, the findings will be put in a statistical report so that no individual family's or person's views can be identified.

If you have any questions about the project, feel free to call us. We think that participating will be an interesting experience and will also be a useful contribution to the future understanding of American families.

Sincerely,

Michael R. Bertoch, Ed.D.
Professor and Head
Department of Psychology

Thomas D. MacRoy, M.A.
Doctoral Candidate

Appendix BDemographic Questionnaire

Family Questionnaire

Code # _____

- I. Who lives in your household? Please list all of the people, including yourself, who ordinarily live there. Names are not necessary but please include their age, sex, education, and relationship.

	<u>Sex</u>	<u>Age</u>	<u>Relationship</u>	<u>Education (years)</u>
A.				
B.				
C.				
D.				
E.				
F.				
G.				
H.				
I.				

- II. Besides people in your own household, which close relatives live in the Logan area? (Grandparents, married children)

_____	_____	_____
_____	_____	_____

- III. Is there another language besides English that is sometimes spoken in your home?

_____ NO
_____ YES What is it? _____

IV. Country of birth of parents:

Mother _____

Father _____

V. Number of years parents married _____

VI. Into which of these groups did your total family income fall in 1976?

____ 0-\$4,000 ____ \$4,000-\$8,000 ____ \$8,000-\$12,000

____ \$12,000 plus

VII. What is your religious preference?

____ LDS ____ Protestant ____ Catholic ____ Jewish

____ Other

VIII. Thank you for your cooperation!

Appendix CLetter to Local Therapists

Dear

This is a followup to our recent conversation concerning your needed assistance in conducting our research. The research involves family triads consisting of father, mother, and identified patient adolescent. We are examining the verbal interaction of these triads for specific dysfunctional linguistic structures and comparing families of adolescents in therapy to families in which no member has received therapy. The results of the study will provide information regarding the types of dysfunctional language structures families use in interaction and may provide useful information regarding therapeutic intervention in disturbed families.

We are grateful for your interest and cooperation; without it we would be unable to conduct the study. We would like you to send the enclosed cover letters and release of information forms (for your files) to the parents of former or present adolescent patients (age 14 through 18). Since we are interested in looking at "disturbed" families, we would ask that you contact families of patients who, in your opinion, have not made significant improvements. Upon receipt of the family's names, we shall contact them to arrange an appointment at the Psychology Department of Utah State University.

If you choose to contact families or to have your secretary contact them, the following information should be covered:

1. They will be sent a release of information form to sign and a cover letter with additional information.
2. They will be contacted by an individual from Utah State University.
3. The purpose of the project is to obtain information about the opinions and decision-making process in families.
4. Their identity and responses will be strictly confidential.

We would suggest that the term "research" or similar terms not be used in your conversation with the patients, because for many people these words carry negative connotations. Words such as "project" may carry a more neutral feeling.

It will be appreciated if you send the names, addresses, and phone numbers back to us in the enclosed, self-addressed envelope as soon as possible. We are on a time-limited schedule and it is essential that we contact families in the very near future. The cover letter to the parents and the release form contains a space for the name of the identified patient adolescent which we would ask you to provide.

Thank you for your cooperation.

Sincerely,

Michael R. Bertoch, Ed.D.
Professor and Head
Psychology Department

Thomas D. MacRoy, M.A.
Doctoral Candidate

Appendix DLetter to Clinical Families

Dear Parents:

First of all, thank you for considering participation in our project. We greatly appreciate your cooperation for without your family, and many others, we would be unable to carry out the project.

As you know, behavioral scientists are interested in families. In order to gain more understanding about families so as to improve our ability to help families as well as individuals, we are asking many families to participate in a special project. An important aim of the project is to learn more about the ideas and opinions of different members of the same family. We also hope to learn more about how families reach decisions. In order to do this, we need to have families come to our office together so they have a chance to tell us their ideas and talk them over.

We are asking for your cooperation in this. It is necessary that we see both of you along with your child . The meeting will be held at the Department of Psychology, Utah State University and takes an hour to an hour and a half. The meeting can be scheduled at a time that is convenient for you, including evenings and Saturdays. In order to show a true picture of the many different points of view in different families, it is very important that many families participate in the project.

The project is approved by faculty members of the Department of Psychology at Utah State University. As is the case with all scientific projects, the findings will be put in a statistical report so that no individual family's or person's views can be identified.

After we have received your name and telephone number, one of us will call you to arrange an appointment to come to our office. If you have any questions about the project, feel free to call us. We think that you will find that participating will be an interesting experience and will also be a useful contribution to the future understanding of American families.

Sincerely,

Michael R. Bertoch, Ed.D.
Professor and Head
Department of Psychology

Thomas D. MacRoy, M.A.
Doctoral Candidate

Appendix ERevealed Differences Questionnaire

Opinion Questionnaire

Here are a number of situations people face in their lives. People have different ideas about what to do in these situations and we are interested in your own personal opinion about them. Please place a check mark () next to the alternative that comes closest to your own opinion.

Also, please answer the following questions:

Your age: _____

Sex: M F

1. The parents of a 14 year old girl want to buy their daughter a new coat. The girl would like to pick out the coat herself to be sure it is in the same style as her friends wear. Her parents want to get a more practical coat for her, one that will last for several seasons. Should the girl pick out the coat herself, or should the parents have the final word.

Girl should pick coat herself _____
Parents should have final word _____

2. Some people believe that there is nothing a person can't do or be if he wants to, and if he really works hard. Do you agree or disagree?

Agree _____
Disagree _____

3. A 20 year old boy who lives at home prefers to go with his parents when they visit their friends and relatives rather than to spend time in social activities with friends his own age. The parents feel that this is not good for him but do not know what to do. Do you think they should let him come with them as long as he wants to, or should they put more pressure on him to spend time with friends his own age.

Let him come with them as long as he wants to _____
 Urge him to spend time with friends his own age _____

4. A 6 year old boy comes home from school crying. He tells his mother that another little boy in his class hit him. His mother tells him to stop being a crybaby and to hit the other boy back next time. Do you think that was the right thing to tell him or not?

Right thing to tell him _____
 Not the right thing _____

5. Mrs. Allen, a widow, has asked her son to wallpaper some rooms in her house and to do some repair work for her. His wife wants him to do work around their own house that needs to be done. Do you think his mother has a right to expect him to do work at her house?

Yes _____
 No _____

6. When a 19 year old girl has a party at her house, should her parents go out for the evening to give her and her friends privacy, or should they stay home?

Should go out _____
 Should stay home _____

7. A Boy Scout group plans to enter a magazine subscription contest. Under the rules of the contest a boy can either try for the individual prize of a bicycle or put his subscriptions in with the other boys in his group to try for the TV set. Some boys think that they should all put their subscriptions together to try for the TV set, other boys think they should each have a chance to try for the bicycle. What do you think they should do?

Put subscriptions together for TV set _____
 Let each boy try for the bicycle _____

8. Mrs. Jones is worried about her 11 year old son, who very often talks back to her when she asks him to do something. She feels that if she lets him talk back he will lose respect for her. But she also wonders if it isn't sometimes good to let a child express how he feels even when it is toward his parents. Do you think it would be a good idea to let him talk back sometimes?

Yes _____
 No _____

9. Some parents think children should not be disciplined very strictly; others feel children should be strictly disciplined so they learn early about what things are right and wrong. What do you think parents should do?

Not use strict discipline _____
 Use strict discipline _____

10. Now that Johnny is two years old, his mother has decided to take a part-time job because the family needs extra money. While she is at work, an older woman comes over to take care of him. Johnny likes this woman but misses his mother a lot, and doesn't feel like playing when she isn't there. What do you think his mother should do?

Stop work and stay home with him _____
 Continue work and let him get used to her being away _____

11. Mrs. Thomas is concerned about her 19 year old son who she feels is always making plans that he does not carry out. For instance, he may decide in the evening to look for a job the next day, but when morning comes she cannot get him out of bed. Do you think Mrs. Thomas should try to pressure him or should she let him carry out his plans in his own way?

Pressure him _____
 Let him carry out plans in his own way _____

12. The question of bedtime is an issue in many families. Do you think a 15 year old boy should be allowed to have the final word about what time he goes to bed, or should his parents have the last word?

15 year old should have final say _____
 Parents should have last word _____

13. Mr. and Mrs. Adams have saved a considerable amount of money during their 35 years of marriage. Mrs. Adams suggests that they give some of this money to their son, who needs it to go into business for himself. Mr. Adams thinks they should use the money themselves to enjoy some of the things they have worked hard for, like going to Florida in the winter. What would you advise them to do?

Give some of the money to their son _____
 Use it to enjoy things they worked hard for _____

14. Children often are disturbed when they find out that their own parents sometimes tell "white lies," that is, small lies to avoid an embarrassing situation or hurting someone's feelings. Should parents try to explain why they have to tell these lies so the children will not be disturbed when they hear them, or should they always avoid telling any kind of lies when the children are around?

Explain "white lies" to children _____
 Avoid telling any lies _____

15. Mrs. Collins is taking Peter to kindergarten for the first time. Peter says that he wants to wear his old cowboy hat. Mrs. Collins would like to let him wear it since he wants to, but she knows that the other children will be dressed in their best clothes and she'll be embarrassed in front of the other mothers if he wears the old hat. Should she let him wear it, or not?

She should let him wear it _____
 She should not let him wear it _____

16. Mr. and Mrs. Carter's 20 year old son sometimes leaves the house for long periods of time without telling his parents where he is going and refuses to tell them where he's been when he returns. His father and mother feel they have a right to know how he spends his time. Do you think he has a right to keep this to himself, or should he tell his parents?

Has a right to keep this to himself _____
 Should tell his parents _____

17. Janice has been spending a lot of time with a girl in her high school class that her parents disapprove of. They feel this other girl is a bad influence and want Janice to stop seeing her. Janice feels she has a right to pick her own friends. Do you think Janice is right in this?

Yes _____
 No _____

18. Margaret loves to play the piano but she knows that she does not have enough talent to become really good no matter how hard she practices. She has decided to stop taking lessons and to spend her spare time doing volunteer hospital work. Do you think she is wise to stop taking lessons?

Yes _____

No _____

19. A 15 year old boy has ideas about religion that differ from those of his parents. His father becomes annoyed when he expresses these ideas and many arguments have arisen. Do you think he should keep his ideas to himself to avoid arguments, or does he have a right to express his own ideas if he wants to?

Should keep ideas to himself _____

Has right to express his own ideas _____

20. Some parents feel that obedience and respect for authority are the most important virtues children should learn. Do you agree?

Disagree _____

Agree _____

Appendix FFamily Life Questionnaire

Age _____

Sex _____

This is a questionnaire about how you and your family get along together. There are four possible responses to each of the questions.

You may answer:

<u>Y</u>	<u>y</u>	<u>n</u>	<u>N</u>
"Yes" strongly agree	"Yes" mildly agree, or "yes" but not so sure	"No" mildly disagree, or "no" but not so sure	"No" strongly disagree

Put a circle around the letter that shows your feelings. Your feeling may have been different in the past, and may be different later, but we are interested in your feelings right now, at this point in time.

Be sure to put a circle around one response for each question. Do not spend too much time on any one question. Please answer frankly and honestly.

Remember always to include yourself as part of the family when thinking of "one of us."

	YES	yes	no	NO
1. It's easy to laugh and have fun when we are together.	Y	y	n	N
2. At least one of us gets angry about very unimportant things.	Y	y	n	N
3. At least one of us doesn't enjoy life enough because he or she is too busy doing what other people want or expect.	Y	y	n	N
4. Except for the kids too young to go to school, there's very little crying that goes on in our house.	Y	y	n	N

	YES	yes	no	NO
5. We are more relaxed when we're together than most families I know.	Y	y	n	N
6. At least one of us often says very nice things about others in the family.	Y	y	n	N
7. At least one of us gets things his or her own way too much.	Y	y	n	N
8. At least one person in the family is picked on too much.	Y	y	n	N
9. Most of the time somebody is arguing with somebody else in our family.	Y	y	n	N
10. I don't expect other members of my family to ever understand the way I feel about certain things.	Y	y	n	N
11. All things considered, I doubt if there are many families that are as happy with each other as we are.	Y	y	n	N
12. I have some feelings that I don't want anyone in the family to know about.	Y	y	n	N
13. One of us is always criticizing or correcting another.	Y	y	n	N
14. When I've been away from my family most of the day, I feel very good about getting back home.	Y	y	n	N
15. We usually have a pleasant time during supper at our house.	Y	y	n	N
16. There is very little lying done by anyone in our family.	Y	y	n	N
17. At least one of us wants other people to do things for him or her too much of the time.	Y	y	n	N

	YES	yes	no	NO
18. We find it hard to agree on things to do together.	Y	y	n	N
19. At least one of us can't stand being criticized even when he or she is wrong.	Y	y	n	N
20. I really enjoy being with my family most any time.	Y	y	n	N
21. We should be more like another family I know.	Y	y	n	N
22. At least one of us often says things that hurt the feelings of the other.	Y	y	n	N
23. Whatever kind of trouble I might be having, I feel I can tell one person or another in my family about it.	Y	y	n	N
24. All in all, we are very nice to each other.	Y	y	n	N

Appendix G

Directions For Scorers

I. SEMANTIC ILL-FORMEDNESS

A. Mind Reading:

SCORE for second or third person subject + verb that describes an internal state of that subject, e.g., "You know ..." (except when used as a pause filler), "He is happy," "He feels ...," "We feel ...," etc.

DON'T SCORE if there is a qualifier, e.g., "I think, believe, feel, infer, etc. that he is happy."

DON'T SCORE if there is a qualifying reason for the belief, e.g., "He said that he feels ..."

B. But:

SCORE when "but" (however, although, yet, and yet, etc.) is used in the sense of "... but I can't ...," e.g., "I want to go but ..." or any other qualification of a statement.

DON'T SCORE "but" meaning "and" as in "I saw her but I didn't see him."

C. Cause and Effect:

SCORE make and cause ONLY as in "He makes me angry," "You cause me problems."

SCORE any verb that attributes power to one person over another person's inner state (e.g. "You irritate, annoy, anger, etc. me.")

II. DISTORTIONS

A. Nominalizations:

1. Look at each noun. Do one of the following tests:

2a. Was it derived from a verb? If yes, SCORE or;

2b. Does it make sense if you say "An ongoing ..."? If yes, SCORE or;

2c. Can you put it in a wheelbarrow? If no, SCORE

NOTE: If you found a nominalization, you should expect at least one generalization or deletion in the same surface structure!

III. DELETIONS

A. Verb Phrase

1. Look at each verb.
2. Could an object or a prepositional phrase be added? e.g., "You're disturbing (me)." "I know (that)." If yes, SCORE

NOTE: Verbs that refer to conveying information to someone (such as: say, claim, tell, talk, inform, urge, etc.) must always have two objects or prepositional phrases. Up to two deletions may be scored for these verbs.

B. Adjectival Verbs:

1. Look at each adjective and its noun.
2. Rearrange it to make a sentence of the form:
NOUN + (am) + ADJECTIVE
(is)
(are)
e.g., "unclear people" becomes "people are unclear"
3. Do you need an object or a prepositional phrase for the new structure to make sense? If yes, SCORE

C. Comparatives:

1. Look at all comparative adjectives (adjective + er or more/less + adjective). e.g., faster, more important.
2. Is the set of comparison missing? (faster than what, more important than who). If yes, SCORE

D. Superlatives:

1. Look at all superlative adjectives (most/least + adjective or adjective + est).
2. Is the set of the superlative missing? e.g., the most interesting of what group. If yes, SCORE e.g., "He is the most interesting (of the four)."

E. Obviously/Clearly

1. Look at each adverb ending in -LY.
2. Make a new sentence of the form "It is + adverb + that ..." but delete the -LY from the adverb. e.g., "Clearly you are stupid" becomes "It is clear that you are stupid."

3. If the new sentence means the same as the old sentence, apply the verb phrase test above (III A) - Is there a missing prepositional phrase? e.g., "It is clear (to me) that you are stupid." If yes, SCORE

F. Modal Operators:

1. Look for all modals in the surface structure.

Examples:

have to
necessary
needs to
should
must
ought
etc.

Does the sentence fail to answer the question "Or what?" If yes, SCORE

not possible
impossible
can't
no one can
no one is able
not able
unable
etc.

Does the sentence fail to say what prevents it from being possible. If yes, SCORE

IV. GENERALIZATIONS

A. Referential Indices:

1. Look at each non-process word.
2. Does it fail to refer to a specific person or thing? (Can you ask "Which particular X?") If yes, SCORE

Common Examples

people (and other plural nouns)
something
somebody
all
each
nowhere
no one
nobody

nobody
this way
one (meaning somebody - "One does it this way.")
every
any
none
nothing

DO NOT SCORE pronouns (you, he, she, it, we, us, they, etc.)

DO NOT SCORE if the word is qualified, e.g.,

"Scientists at MIT say ..."

SCORE if the word is not qualified, e.g.,

"Scientists say ..."

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